REPORT RESUMES

ED 020 550 24 CG 002 335

CULTURAL AND SOCIOLOGICAL FACTORS RELATING TO LEARNING DEVELOPMENT. FINAL REPORT.

BY- MODIANO, NANCY MACCOBY, MICHAEL

NEW YORK UNIV., N.Y., SCH. OF EDUCATION

REPORT NUMBER BR-6-8636 PUB DATE 31 AUG 67
GRANT OEG-1-7-068636-0191
EDRS PRICE MF-$0.50 HC-$4.80 118P.

DESCRIPTORS- *COGNITIVE DEVELOPMENT, MINORITY GROUP CHILDREN, FAMILY RELATIONSHIP, *SOCIOECONOMIC INFLUENCES, *SOCIOCULTURAL PATTERNS, *PERSONALITY DEVELOPMENT,

THE PRIMARY PURPOSE OF THIS STUDY WAS TO COMPARE CULTURAL AND CHARACTER VARIABLES AND RELATE THEM TO THE COGNITIVE DEVELOPMENT OF MEXICAN PEASANT CHILDREN. THE CULTURAL VARIABLES STUDIED INCLUDE ECONOMIC LEVELS, MORAL AND AFFECTIVE JUDGMENTS, AND THE RELATIONSHIPS BETWEEN PARENTS AND CHILDREN. MODES OF ASSIMILATION, SOCIAL RELATIONS, FIXATIONS, AGGRESSIVENESS, HOSTILITIES, FEARS, ASPIRATIONS, FANTASIES, AND PRODUCTIVITY WERE THE CHARACTER VARIABLES. THE COGNITIVE VARIABLES INCLUDE GENERAL LEVEL OF INTELLECTUAL FUNCTIONING, EQUIVALENCE AND DIFFERENCE JUDGMENTS, MORAL REASONING, AND ATTRIBUTIONS OF LIFE AND CAUSALITY. IT WAS CONCLUDED THAT VILLAGE CHILDREN DID TEND TO DEVELOP THOSE INTELLECTUAL SKILLS MOST FUNCTIONAL FOR THEIR SOCIETY. ADDITIONAL CONCLUSIONS AND IMPLICATIONS ARE GIVEN. (CG)

BR-6-8636
PA-24

ED020550

FINAL REPORT
Project No. 6-8636
Grant No. OEG-1-7-068636-0191

PA-24

CULTURAL AND SOCIOLOGICAL FACTORS RELATING TO LEARNING DEVELOPMENT

1967

U.S. DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

CG 002 335

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Aug. 31, 1968

CULTURAL AND SOCIOLOGICAL FACTORS RELATING TO LEARNING DEVELOPMENT

Cooperative Research Project No. 6-8636

Nancy Modiano
New York University
New York, New York

Michael Maccoby
Instituto Mexicano de Psicoanalysis
Mexico, D. F.

1967

The analysis of the data reported herein was supported by the Cooperative Research Program of the Office of Education, U. S. Department of Health, Education, and Welfare.

TABLE OF CONTENTS

Page

Acknowledgements vi

CHAPTER I. INTRODUCTION 1

- Theoretical Framework 1
- Culture and Cognitive Style 3
- Procedures 7
- Plan of the Report 11

II. THE SETTING OF THE STUDY 13

- History 13
- The Children of Las Cuevas 14
  - The Pre-Natal Period and Birth 15
  - Infancy 17
  - Early Childhood 20
  - Informal Education 22
  - Formal Education 24
  - Later Childhood 30

III. THE COGNITIVE VARIABLES 35

- School Achievement 35
- Draw-A-Man 35
- Raven's Progressive Matrices 36
- Stanford-Binet 37
- Moral Judgements 38
- Judgements of Equivalence and Difference .. 40
- Attributions of Life and Causality 42
- Attributions of Worth: The Value of Money 44
- Attributions of Worth: Goodness 45
- Interrelations Among Cognitive and Cultural Variables 47

VI. THE CHARACTEROLOGICAL VARIABLES 49

- Personality Measures 49
  - Mode of Assimilation 49
  - Productivity 49
  - Social-Political Relations 50
  - Parental Fixations 51
  - Other Personality Measures 51

Page

Sex, Age, and Personality 53
    Sex 53
    Age 54
Syndromes of Character 56
    1. Receptive Character 56
    2. Authoritarian-Destructive Character 56
    3. Exploitative-Rebellious Character (Lone Wolf) 57
    4. Submissive-Marketing Character 57
    5. Rejection of the Father 58
    6. The Infantile Factor 58
    7. Democratic-Autoaffirmative Character 58
    8. Productive-Hoarding Character 59
    Intercorrelations Among the Factors .. 59
    The Factors Related to Sex and Age ... 59
    The Factors Related to Economic Status 60
The Child Factors and the Character of the Parents 60
Character and the Cognitive Variables 62
The Cognitive Variables and Parental Character 64

V. CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS 66

Conclusions 66
    Cognitive Development 66
    Personality Development 67
Implications and Recommendations 68
    Personality Development 68
    Cognitive Development 68
    Further Research 69

VI. SUMMARY 70

Introduction 70
Procedures 70
Setting of the Study 71
The Cognitive Variables 72
    School Achievement 72
    Draw-A-Man Test 72
    Raven's Progressive Matrices 72
    Stanford-Binet 72
    Moral Judgements 73
    Judgements of Equivalence and Difference 73

Page

Attributions of Life and Causality ... 73
Attributions of Worth: The Value of Money 74
Attributions of Worth: Goodness 74
The Characterological Variables 74
Personality Measures 74
Sex and Age Related to Personality ... 75
Syndromes of Character 75
The Child Factors and the Character of the Parents 76
Character and the Cognitive Variables 76
The Cognitive Variables and Parent Character 76
Conclusions, Implications, and Recommendations 76

REFERENCES 78

APPENDIX A. TABLES

1. Distribution of Scores on the Draw-A-Man Test (In Percentages) .... A- 1
2. Distribution of Scores on Raven's Matrices (In Percentages) .... A- 2
3. Distribution of Scores on the Stanford-Binet and Cattell Tests .... A- 3
4. Stanford-Binet: Intermediate Sub-Tests for Young Children; Cattell Infant Intelligence Scale .... A- 4
5. Stanford-Binet: Intermediate Sub-Tests for Young Children; Terman-Merril .... A- 5
6. Stanford-Binet: Intermediate Sub-Tests for Young Children; Summary .... A- 6
7. Stanford-Binet: Verbal Responses on Intermediate Sub-Tests for Young Children .... A- 7
8. Responses to Moral Reasoning Stories (In Percentages, by age group) .... A- 8
9. Responses on Differentiation Task by Village Children (Mean Number of Responses) .... A- 9
10. Responses on Equivalence Task by Village Children (Mean Number of Responses) A-10
11. Responses on Equivalence Task by Various Groups (Percentages Using Attribute) A-11
12. Attributions of Life A-12
13. Criteria for Attribution of Life A-13
14. Responses to the Two Money Questions (In Percentages) A-14
15. Criteria for Attributions of Goodness A-15

Page

16. Significant Correlations Between Age and Cognitive Variables A-16
17. Significant Correlations Between the Draw-A-Man and Other Cognitive Variables A-17
18. Significant Correlations Between Success at Formulating Equivalencies and Other Cognitive Variables A-18
19. Composition of the Personality Sample A-19
20. Character Traits in Relation to Age and Sex A-20
21. Intercorrelations Among the Personality Factors. A-23
22. Personality Factors Correlated with Sex and Age. A-24
23. Child Character Factors Correlated with Father's Character Factors A-25
24. Child Character Factors Correlated with Mother's Character Factors A-26
25. The Productive Child Character Factors Correlated With Measures of Intellectual Achievement A-27
26. The Productive-Hoarding Child Character Factor Correlated with the Drawings of Objects A-28
27. Fathers' Character Factors Correlated with Measures of Children's Intellectual Development. A-29
28. Mother's Character Factors Correlated with Measures of Children's Intellectual Development. A-30

ACKNOWLEDGEMENTS

This study is based in large part on data that were gathered under a grant from The Foundations Fund for Research in Psychiatry. Dr. Erich Fromm directed the village study, and Dr. Michael Maccoby was in charge of the child study. He is also responsible for the theoretical sections of the report. Dr. Nancy Modiano collected most of the child data and has been responsible for the analysis of data and organization of the report.

CHAPTER I

INTRODUCTION

One of the major problems faced by educators today is that of adapting curricula to meet the cognitive needs of children from lower socio-economic groups. While we recognize the existence of cultural variables which affect intellectual development and stress these variables more and more, we know little about them and less of how they affect cognitive development; we know relatively little about our disadvantaged children and less about their patterns of cognitive growth. How do their patterns compare to those of our well studied middle-class children? What intellectual strengths do they bring to school? More broadly, how do cultural and characterological variables relate to the development of cognitive processes in children?

Cultures have been studied descriptively and attempts have been made to relate patterns of child rearing to adult personality traits but little has been done to analyze cultural and character variables, separate them into their component elements, and then relate them to cognitive development.

The primary purpose of this study is to compare such variables; the setting is a peasant village in central Mexico, where both culture and economy differ sharply from many aspects of our own dominant culture. The cultural variables studied include economic levels, moral and affective judgements, and the relationships between parents and children. The characterological variables include modes of assimilation, social relations, fixations, aggressiveness, hostilities, fears, aspirations, fantasies, and productivity. The cognitive variables include general level of intellectual functioning, equivalence and difference judgements, moral reasoning, and attributions of life and causality.

Theoretical Framework

This study of character and modes of thought of Mexican peasant children forms part of a larger study, initiated and directed by Dr. Erich Fromm, which explores the relationship between class and character in a Mexican peasant village. The overall study charts the social and economic pressure of village life and human responses to these pressures, especially in terms of character. In the analysis of the data dealing with the adults it has been found that those men who are most successful economically and healthiest psychologically are characterized by a moderate level of psychological productiveness and by the hoarding mode of assimilation. The least well adapted, on the other hand, are the passive, receptive and exploitative peasants whose motivational structure (character) does not mesh with the realities of peasant society.

The goal of the overall study is not limited to discovering the most and least adaptive character types. Our interest in character is broader. The study also relates motivation to social pathologies such as alcoholism, violence, and family disintegration. It asks whether such social pathology, as well as inefficient agricultural production, results from social conditions alone or whether motivational factors also play a significant role. Further, we wished to learn what was needed for the peasant to adapt himself into a more industrialized and productive society, one which might better satisfy the needs of its people. Social scientists and policy makers have commonly viewed this as a problem for formal education, a technical question of teaching new methods in new ways.

We feel that such an approach is limited. It treats people too much like machines which can be programmed more efficiently. It ignores the human element, including the structures of motivation and thought that, once developed, become relatively permanent and resistant to change via conventional educational methods. Our aim has been to discover and map these structures, to learn something about their function within a peasant society, their resistance to modification, and the way in which they develop so that plans for development or education in the future might be better rooted in the cultural and psychological reality of the peasant. To be viable, curriculum modification, as well as changes in the overall educational institution, must be based on these realities; until now such has rarely been the case.

In light of the above, the present study of the village children plays an essential role. We can discover when the productive and negative character structures jell and become relatively permanent. We can explore the relationship of character to the environment of the child in terms of socio-economic class, family relations, methods of child rearing, and the character of parents. In a more general way we can also investigate the relation between child character and institutions such as the school, religion, games, and folklore.

To trace the development of thought patterns, of cognitive style, one must look at childhood. The study of adults calls attention to consistencies in the peasant's modes of thinking and perceiving his world, modes which are different from those common to more industrialized societies. In what manner do these patterns of thought develop in childhood? How are they related to the culture? Furthermore, what is the relationship between cognitive style and character structure?

Just as the study of character grew out of theoretical premises, so in the study of thinking we started out with a rudimentary theory relating cognitive style to culture.

Culture and Cognitive Style

Observation of different societies supports the assumption that the socio-economic base of each society demands a particular type of intelligence from individuals within that society. Without the intellectual equipment needed to participate viably in the economy and the social institutions the individual is crippled in his ability to achieve success and often in his ability to adapt.

In a large industrial society like ours what is required is an abstract-operational style of thought or intelligence. Such intelligence is tested by the Wechsler Intelligence Scales, the Stanford-Binet, and others, tests which require for success that the individual be equipped with a large vocabulary and extensive informational knowledge. These form the basis for intensive and intricate abstract communication with others; concepts must mean the same thing to all those who work together in the close intermesh of the industrial society.

In addition, the industrial man must have the social attitudes that allow for smooth organization. He must know what is generally expected of people in the kinds of situations tested, for example, by Wechsler's "comprehension" subtest. His answers to questions about the role of government, the purpose of taxes, of criminal justice, etc., must neither be blindly acquiesent to authority nor more radical than the social consensus. Moreover, he must be willing to put himself out to answer silly questions or perform tasks which have no meaning other than that of allowing himself to be measured and compared to others in terms of abstract scales. He must be willing to remember strings of numbers, to concentrate on the designs of blocks, rapidly to match number and symbol. His ability to do all this has less meaning in terms of individual development and self-realization than it does in terms of ability to get through educational institutions, to work within corporations, to persevere and succeed against competition. Such intelligence, indeed, is a necessity in a highly industrialized society.

No such necessity exists in a peasant society where work is simple, concrete, and for the most part limited to small, independent operations. Essentially the peasant's mode of work has not changed for centuries; it is dictated by a small parcel of land which produces little more than subsistence. Peasant economic structure does not demand complicated communication or interdependence of workers. There is no corporative structure which selects those individuals who are ready to respond heart and soul to aptitude or intelligence tests. The peasant sees no function for such examinations and feels suspicious when he is asked to "heat up his head" to no good purpose.

What is the "intelligence of necessity" demanded by a peasant society? The answer is: relatively little compared to a highly complex industrialized society. The peasant must learn to be perceptive, to distinguish those changes in nature which are economically important for him. He must be alert to ripening crops, plagues, changes in the weather, to the countless perceptual details which would not interest a city dweller.

In an industrial society people tend to judge others on the basis of institutional identities. They categorize a person in terms of his job, his level of education, and the network in which he moves. Industrial man expects others to act more or less in accord to social role and he responds more to the role than to the man. The peasant, on the other hand, has had centuries of experience in being cheated both by middlemen and by his neighbors. He must learn to be wary and to respond to individual character rather than to social role, which he sees as a mask. The legendary shrewdness of the peasant is a necessity if he is to prosper. He cannot depend upon social institutions such as the law or the police to protect him and he cannot count on social attitudes such as those which keep industrial man more or less honest in living up to contracts. He must be perceptive about people as well as about nature.

The Mexican peasant has also, for centuries, been subjected to the overlords of the haciendas, and has had to learn another type of intelligence, one which can be called "strategy for pleasing and gaining favor." The peon, or landless peasant, finds utility in the ability to ingratiate himself with a patron who may help him. During the era of the hacienda this ability to ingratiate had survival value, just as it had for the Negro slave. Traits such as strategies for pleasing do not easily disappear from a culture, especially when they remain useful for adaptation.

One can observe in a Mexican peasant village the ability of people to avoid friction with others. In general, peasants treat conversation neither as a search for comprehension of the other person nor as a means to more efficient completion of tasks; conversation may be aimed at pleasing, at insulting, or at avoiding confrontation, for no one expects to hear the truth if truth would cause friction. For industrialized man concepts and communication should serve the abstract ideals of accuracy and efficiency. In peasant society efficiency is often meaningless and accuracy of little import. Words, therefore, serve rhetoric, the art of persuading and of pleasing. A type of peasant much admired by other villagers is one who has mastered the art of rhetoric, who paints with words and moves hearts. Here it is questionable whether we are still dealing with the intelligence of necessity or rather with a form of intelligence which allows the peasant to transcend necessity and achieve individuality and self-expression, for strictly speaking, (economic) necessity demands only that the peasant be moderately perceptive toward his physical environment and astutely suspicious in dealing with others.

The acquisition of thought patterns or mode of intelligence demanded by a socio-economic reality thus equips the individual to adapt successfully to his environment. Such acquisition will also be more or less conducive to the individual's development as a person.

The adaptational function is only one way of examining intelligence. There are other human implications. For example, the abstractification of industrial society may result in more superficial relatedness to people and nature, and less perception of uniqueness. The high value placed on conventional comprehension dampens critical capacities. People seek the correct answer, not the truth; for many, abstract thought limits experience and mechanizes intelligence.

On the other hand, abstract thought processes may be employed in the service of deeper understanding. The individual who pays attention only to the concrete and the perceptible remains at the mercy of his senses; his perception is determined by bright colors or striking forms, he is tyranized by smells and textures. Abstract thought frees the individual to concentrate (if he is able to concentrate) on the qualities and uses of things not immediately apparent. The scientist is the individual who masters abstract thought without loosing his relatedness to the concrete world and who is capable of discovering underlying laws of nature and charting invisible forces. At this level of intellectual development abstraction sensitizes the individual to perceive essential attributes which would not be apparent to the naive observer.

The peasant's intelligence and modes of thought do not alienate him from the world of concrete objects, but they do not equip him to discover either the imperceptible nor that which is perceptually muted. The industrial man's abstract intelligence, in contrast, may free him from perceptual determination at the expense of chaining him to consensual interpretations and to abstract stereotypes which blind him to the concrete qualities of things.

While the socio-economic base of society demands a particular type of intelligence, it may also provide means for going beyond this adaptational minimum. In highly developed cultures or civilizations education is not limited to teaching the intellectual skills necessary for survival. The opportunity exists to learn skills and to acquire the discipline necessary for self-expression and creativity. Here education is not bound by necessity but belongs to the realm of play, of freedom. It is the playful interest of the scientist, artist, philosopher, or religious thinker -- his sense of freedom from necessity -- which allows him to transcend conventional thought patterns and to explore or create for the sole purpose of expressing his powers to understand or create.

How much an individual will develop ability to express his creative powers demands on both cultural and individual factors. The cultural factors include levels of abundance, socio-economic pressures, and the development within the culture of the arts and sciences. Leisure and freedom from economic necessity provide a basis for highly differentiated development of the arts and sciences, for play activities that do not need to be economically productive. As Fromm explains in Escape from Freedom (6) and The Sane Society (8) a socio-economic system which is based on the profit motive encourages an unnecessary feeling of scarcity. By stimulating needs for new material things, by planning obsolescence, and by encouraging invidious comparison, free and playful self-development is discouraged while fear and greed are reinforced. Abundance must be allied with values placed on free but disciplined self-expression, a combination which historically has occurred most often within an aristocratic class of society. In such a setting the development of self-expression depends upon the opportunity to learn from masters, traditions of artistic and scientific discipline, and, within the sciences particularly, scientific conscience.

The individual factors include strivings for self-expression, individuation, and freedom. The strength of these strivings as contrasted to conformist or adjustment forces in an individual's personality depends on his constitutional endowment (such as energy, strength of will, natural ability) but even more upon his character. The more psychologically productive the individual -- the more active, awake, independent, and related -- the more he will seek disciplined self-expression. The less productive he is -- the more passively receptive, exploitative, hoarding, or the more he markets himself like a package -- the less he will develop the means and discipline necessary to create or to understand; his interest is to get or to preserve, not to produce.

Paradoxically, as Huizinga demonstrates in Homo Ludens (11) the forms of play rooted in freedom and not necessity become the structures later in history -- the economic, political, legal, and technical structures -- which raise civilizations to new material and cultural levels. In modern industrialized societies we discover that pure science motivated by a spirit of disciplined play has helped to create rich technology; it is less obvious but also true that the human attitudes which make it possible to run our society are in large part learned in children's games.

The fact that the arts and sciences turn out to have economic functions is an argument which is particularly impressive in a society such as ours, based as it is so heavily on the profit motive. Indeed, in our society it is felt that all new discoveries should have utility. Although we talk of the arts and sciences for their own sakes we are constantly asking their purpose in order to satisfy ourselves that they can be classed with necessities. In fact, however, they are necessities only to the individuals who value freedom above all things. Even the idea of "art for art's sake" misses the point that play has a human function which differs from economic utility and which clashes with the spirit of our society.

In our society freedom from necessity has led to more sophisticated material desires, a demand for more comfort and luxury, but not to a corresponding striving for individuation. Rather than broadening its realm, play has come to serve an increasingly artificial necessity. Games become professionalized, even in childhood, and no art is free from exploitation for commercial purposes. Furthermore, the attitudes learned in games are necessary for the teamwork demanded in corporations and bureaucracies, and the bastardization of artistic expression creates needs to buy new products. The realm of play and freedom that helped create the civilization has become so useful that it has been conquered by the realm of necessity.

The peasant society we are studying is in many ways the opposite of our industrial society. Rather than use creativity to increase production and efficiency, the peasant society lacks anything but the most simple and uniform means of self-expression. The individualistic and creative individual is seen as a threat to the equilibrium and distribution of limited goods. The fiesta, one of the few opportunities for self-expression, serves to maintain this equilibrium by encouraging the rich to exchange their wealth for community gratitude and prestige. Occasionally a creative person with an exceptionally strong spirit of play and self-expression will transcend the fear of individuality, but more often such people leave for the cities (5). As we have described elsewhere (16), even the games of village children emphasize the dangers of individualism and reinforce attitudes of submission to authority and to consensus.

Procedures

These thoughts about the relationships among culture, cognition, and character were the basis for choosing instruments to explore character and modes of thought in peasant children. They led us first to not expect the village children to display the type of intelligence characterizing the industrialized world, but to search for methods of measuring the "intelligence of necessity" demanded by peasant society. Beyond this we also investigated the realm of play and freedom in order to compare measures of individual self-expression and creativeness with characterological traits. Wherever possible we attempted to clarify our study through cross-cultural comparisons, either relating our findings to the work of others or, in some cases, gathering comparable data in cities. Where this was not possible we sought to lay the groundwork for future cross-cultural exploration concerned not only with adaptation but also with the results of adaptive mechanisms and styles in terms of deeper relatedness and individuation.

With these aims in mind we employed three types of cognitive tests:

1. Tests which would measure the industrial world's "intelligence of necessity." These included Raven's Progressive Matrices (26), the Stanford-Binet (29), the Cattell Infant Intelligence Scale (2), and the Draw-a-Man (9).

2. Tests to explore the development of cognitive style, from the concrete and perceptual modes of categorizing to abstract and formal modes. In choosing measures we were influenced by both Piaget and Bruner. We chose tests that examined ways of conceptualizing similarities and differences among objects (22), of conceptualizing moral judgements (25), of more general valuation, and of causality (23,24).

In analyzing the results of these tests we were concerned not only with the development of formal-abstract operations (which is the interest of Piaget), but also in the quality of thought, the degree of relatedness expressed in both valuation and conceptualization. We did not assume that achieving abstract-formal levels was the unmixed goal of child cognitive development; rather we conceived of it as a type of development, characteristic of industrial society, which equipped the individual with intellectual power but also could alienate him from experience. We searched for other possible goals and outcomes more typical of simpler peasant society.

3. Tests of creativeness and independent self-expression. These included a drawing test (13) and projective measures such as the Rorschach (25), the TAT (21), and the CAT (1). Of course, in this area cognitive and personality measures merge.

A basic sample of 50 children, five boys and five girls each, at ages six to seven, eight, nine, ten, and eleven, was randomly selected. Because of our uncertainty of children's ages (the parents themselves were unsure) and because of the enthusiasm and curiosity of some team members, parts of the battery were given to additional children between the ages of six and twelve. The basic sample was further extended to include teenagers, who were already being tested in a downward extension of the adult battery; here the availability and willingness of youngsters to participate entered into their selection, so that the adolescent sample is not strictly a random one. The basic sample was later extended downward to include children from six months to five years of age, for I.Q. testing only. Here there was a stricter attention toward random selection, although this was never fully achieved since it was necessary to begin by testing babies from families with whom we had already established warm relationships. We added to this initial sample one which was selected on a strictly random basis, so that the final infant sample consisted of the random one plus a few from the initial, more accessible, group who did not also appear on the randomly selected list.

All together 168 youngsters from 70 families were tested and interviewed, although not all received all the tests for their age group.

Two individualized test batteries were developed. The adolescent battery was originally derived from the adult battery; it was later enlarged to include some of the procedures used with the younger children. The children's battery was developed independently. Common to both were the TAT and questions calling for moral judgements. For some of the youngest children the TAT was augmented with parts of the CAT. In addition, each child was given the socio-economic rating developed for the adult study which reflected the family's level of material wealth.

In addition to the above the children's battery included a test of equivalence and differentiation judgements, Raven's Matrices, and a questionnaire designed to elicit responses in the areas of affective reasoning, attributions of life and causality, monetary equivalences, human motivations, games popular in the village, and attitudes toward play.

The adolescent battery, in addition to the TAT and the moral judgements questions, included the Rorschach, drawings designed to test for originality, and, for a sub-sample, the same questionnaire which had been designed for the younger children.

The individualized tests were generally administered in two one-hour sessions, sometimes in the corner of the school yard, sometimes in a youngster's home, often in a special room we had rented for the purpose. Our first such site was a centrally located peasant-style house which also served as living quarters for some team members. It was furnished with cots and shelves lent by the American Friends Service Committee, a low table and two small chairs borrowed from the Town Hall (Ayudantia), and a large, low stool used by one of the testers. The room housed all our testing equipment, several shelves of toys, and the clothing of the female team members who lived there. We later moved to a two-room house in which it was possible to separate the living and testing quarters.

A typical testing session with a school aged or younger child would be arranged ahead of time by the tester visiting his home, chatting with his mother, and asking if it would be possible to "borrow" him at a particular time in order to ask him some questions (¿Me podría prestar a su hijo? Quisiera hacerle unas preguntas.). A mutually convenient time would be arranged, perhaps immediately, perhaps later that same day or the next. Testers were always careful to maintain good relations with all families in the village (avoiding all feuds or pointedly socializing equally with both sides of a feud which could not be avoided); although some appointments had to be rescheduled we were never denied permission to work with any child.

Sometimes a child would go by himself to the testing room but more often the tester would call for him at the arranged time. If several children in a family were to be tested the older ones would be seen first, and told to come alone to the testing room. Younger children were generally accompanied by older siblings, some of whom were already familiar with our items. However, our injunctions to not supply answers were always obeyed; indeed, the only person who ever coached a child was a grandparent (he probably lowered the I.Q. score in the process).

All the children, save some of the very youngest, seemed readily at ease with the testers and eager to cooperate. They appeared to enjoy most of the testing procedure, to have their opinions respected and recorded. Only occasionally did a child grow restless and ask to have a session ended; this wish was always respected. True to their training, the children deemed it correct to obey and try to please us, at least superficially. The younger children, who were sometimes ill-at-ease in the strange surroundings (if they had been brought to the testing room) and with the tester, were quickly soothed by their older siblings, who generally told them to not be afraid and to look at the pretty little toys (following our suggestions). The youngest babies were tested in the presence of their mothers.

Although the ordering of the test items was left somewhat to the discretion of individual testers, the usual order was to administer the moral judgements questions and the TAT in the first session and the remainder of the battery in the next. Tape recorders were not used, but all responses were written verbatim, to be typed later (with the exception of the Stanford-Binet and Cattell, where the test booklets were used).

At the end of each testing session the child was thanked and told he could leave (Muchas gracias. Ya puedes ir.). Only occasionally was an extrinsic reward (of one peso) offered and only once did a child attempt to steal one of the toys used in the tests.

In addition to the tests included in the battery, socio-economic ratings were obtained for all youngsters, and figure drawings and school achievement scores for those enrolled in the village primary school. The Stanford-Binet and/or Cattell Infant Intelligence Tests (along with a measure for malnutrition which turned out to be invalid) were given to a special subsample consisting of the seven and ten year olds in the basic sample and all the children below the age of six.

Descriptions of the specific tests, methods of scoring, and N's are given in Chapter III.

Our study of the children did not consist merely of the testing and interviews. We spent much time in the village, living there, participating in its life, visiting families, observing in the streets, in homes, and in the schools. We maintained the special room for testing mentioned above and on numerous occasions invited many children to play with our ragged (but to them impressive) collection of toys. We sponsored a Boys' Club, molded after the 4-H Clubs, which afforded us much opportunity to observe and work with boys over the age of 10; no Girls' Club was formed because parents objected to such extra-curricular activities and because girls were more needed for work at home than were boys. Through the help of the Friends Service Committee we maintained a small lending library which was very popular with the children.

All of the above gave us numerous opportunities to observe and interact with the youngsters in a variety of settings. When one of the more active team members returned to the village after an absence of five years she was remembered as though she had left recently, even by children who had been three and four when they had come to play with "her" toys.

The field study team was directed by Michael Maccoby. Members primarily concerned with working with the younger children included Nancy Modiano, Guadalupe Castro, and Virginia Heras. Those primarily involved in testing the teen-agers included Isidro Galván, Italia García, Andrian Cañedo, and Bertha Javkin. Participant-observers resident in the village included Nancy Modiano, Patricia Lander, Edith Churchill, Ned Filor, Thomas Fletcher, and Brenda and David Hansen.

Plan of the Report

In the chapters that follow the methods will be described in more detail before presenting the results of the study. The plan is as follows:

1. A description of the village and the child's world in it, including methods of child rearing and the average child's

experiences with the institutions of the village -- the church, school, family, and peer group -- as he grows from infancy to adulthood.

2. The cognitive tests and their results, with their relationship to school achievement, class background, age and sex differences.

3. The measures used to explore character with the results first in terms of the distribution of character traits among children in relation to age and sex; and then syndromes of character traits, their meaning and their relationship to class and parental character.

4. The relationship between character and cognitive variables as discovered in the village children.

CHAPTER II

THE SETTING OF THE STUDY

Las Cuevas (a fictive name), is a pretty village with lush fruit trees and flowers brightening the open house lots and a stone aqueduct and hacienda dating back to shortly after the arrival of the first Spaniards. It is an agricultural community of about 850 people, lying in a broad, well-irrigated valley about 65 miles south of Mexico City. At about 4,500 feet above sea-level, with some of the richest land in all of Mexico, traditional cash crops have been sugar cane, rice, and some vegetables; home production has generally been limited to occasional kitchen gardens. About 40 percent of the families enjoy land rights (*parcelas de ejido*), while most other income is derived from salaried farm labor (*jornaleros*); miniature general stores and canteens dot the community and a number of women work as maids, either for their richer neighbors or at the near-by state capital.

History

Remains of a Nahuatl community were found near one of the several mineral springs at the edge of the village. The hacienda was constructed shortly after the Spanish conquest and is reputed to be the third in the region, perhaps built for one of Cortes's sons. Sugar production was introduced at that time and slaves were brought from many parts of Mexico; some Negroes were imported for the harder mill labor. Las Cuevas became a settlement of about 250 "souls" directly tied to the hacienda; there was apparently considerable mixing of races and cultures so that it became a mestizo community almost from the time of the conquest.

During the Revolution of 1910 Emiliano Zapata's army was formed from the district and Las Cuevas found itself in the middle of his struggle for land reform. Village life was disrupted, the population scattered, the hacienda destroyed.

When peace was reestablished ten years later a new community was formed, composed primarily of newcomers, as was true for much of the area; it still contained about 250 people. Beginning in 1924 hacienda lands were expropriated and divided among those who wanted plots. After about 1930 new arrivals could no longer be accommodated, but they continued to swell the population until, in 1960, less than 15 percent of those 16 years and older had at least one parent born in the village. Almost all the immigrants came from within a 200 mile radius; only seven percent (19 of 290) were from more distant regions (28). Thus Las Cuevas developed into a community representative of mestizo peasant villages throughout the area, much like the peasant communities and cultures described by Foster (4) and Wolf (30).

A traditional authoritarian patriarchal family structure is idealized, although in reality women often play the stronger role (14). Children have particular reason to see women as dominant, for the people believe both that women should be entirely responsible for the care of small children and that men should limit their child rearing activities to the teaching of farming skills to their sons and the occasional meting out of harsh discipline (at their wives' requests).

The Children of Las Cuevas

Children are almost always wanted, especially the first four to six; others are accepted resignedly. Families tend to run large, with an ideal of a birth at the end of the first year of marriage and every second year thereafter. At the time of the field study birth control was being practiced by three women, and another man and woman had approached team members for advice (which was not followed). Men tend to state that they prefer having boys, women that a child of either sex is equally welcome; it was our impression that there was a slight preference by parents for children of their own sex, each looking for his helpers.

Infancy is a good time of life for Cueveros. It includes about the first two years of life, and is about the only time when one's wants are met quickly, with warmth and indulgence, when one's whims are answered, when one is the focus of affectionate attention by all members of the family. As babies become more independent and are supplanted by new infants their care is left more in the hands of older siblings or young aunts, who, while still somewhat indulgent, are not as affectionate. During this time they are expected to become more responsible for themselves and others begin to express annoyance for stubbornness or inconveniences. However, young children are still treated with much patience.

At about the age of six for girls and seven for boys a new stage in life begins. At this time they are expected to begin to work, each with the parent of the same sex, although less for the boys; all are expected to be readily available for running errands. This is a period when children become quite responsible for their behavior and a period when parents, no longer as patient, express annoyance readily. This period, when adult skills are acquired and refined, ends about two or three years after puberty, when, among the poorer villagers young couples elope and establish homes of their own, and, among the richer families boys and some girls go away to continue their studies, work, and other girls continue helping their mothers while awaiting "respectable" marriages.

As with English, Spanish terms do not show exact correspondence with the stages of life described above. Infants tend to be called nene and young children niñito (niñita for girls). The term niño (or niña) is used for all pre-pubescents above the age of about six, and muchacho (muchacha) from pubescence until about the age of 20 (by which time most Cueveros have been married for a few years). Beyond this, at about the age of 35, the respectful form Don (Doña) is used as a form of address; old age, when people are no longer able to maintain themselves, is recognized as a final stage of development.

The Pre-Natal Period and Birth

Las Cuevas maintains considerable contact with the outside world through transportation, radio, television, and family contacts with villagers who have moved elsewhere, especially to the state and national capitals. Many of our customs and beliefs are respected and, where possible, adopted. "Scientific" explanations are given for much of the reproductive cycle. Indeed, the only aspects of the cycle to receive different explanations, and then by a minority of the older women, are certain abnormalities, such as birthmarks (caused by the mother's frustrated craving for some food, particularly a fruit, of the same color as the mark), twins (caused by an eclipse of the moon or by planets), and malformed babies (again caused by a lunar eclipse or bad planets, or by having an alcoholic father). All other explanations, both for normal and abnormal events, are much the same as ours.

Pregnant women are under no special restrictions as to foods or activities, although, especially in the later stages of pregnancy, they try to avoid the heaviest of household and farming tasks for fear of inducing premature labor or stillbirths. The few who believe in the ill effects of eclipses and planets wear a piece of iron (a safety pin or key) in their waist bands or follow the older custom of binding a pair of scissors to their abdomens by means of a broad sash worn under the skirt.

Pregnancy is little commented upon and generally ignored by the other members of the family. The only family member believed to be affected is the youngest child, who may suffer from chipilez (excessive nervousness and crying believed due to jealousy of the unborn child). Once the new baby arrives this jealousy is quickly and efficiently suppressed.

One team member observed a two year old boy's reception of of his new sister:

> He tried to hit her. His mother's first reaction was to divert his attention; for a while she succeeded but he later resumed the aggressive pattern. She then told him, very gently, that he should stop; he persisted. She then told him, still gently and patiently, that his father would be very angry if he thought he were mistreating the baby. This appeared to deter him; she then called an older sister to take him out into the yard to play. Two days later, and from then onward, this two-year old showed no outward signs of jealousy.

Sterility was not a problem in Las Cuevas at the time of the field study; indeed only one woman was known to not have borne children, but she was unmarried and generally worked as a maid in Mexico City. Nor was any woman known to have died of child birth during the course of our field work. Abortions, other than spontaneous ones, were quite rare. Illegitimate children were accepted both by their mother's family and by other villagers; like legitimate children they received their father's family name as well as a second surname, their mother's. Some children were given their parent's first name, but most parents followed the Saint's calendar for naming.

Very few children in Las Cuevas were adopted, legally or otherwise. These were either orphans or youngsters whose parents could not care for them, and were generally brought up by close relatives.

Whenever possible the women of Las Cuevas sought medical attention during the last months of pregnancy and preferred to be attended by a physician during labor. Those who could used a hospital in the state capital or at the sugar mill cooperative to which all *ejiditarios* belonged; procedures there were similar to those followed in our hospitals except that mothers were expected to nurse their babies. Those who could not avail themselves of such services sought the help of the trained midwife in the village and some gave birth in the medical station constructed by the Federal government during the time of our field study. Only the poorest women continued to use untrained midwives (*unas mujeres intelegentes que viven por ahí*; some intelligent women who live over there), not so much out of medical or aesthetic preference as because they charged less (75 pesos as compared to 100 pesos for the trained midwife) and helped with the family wash for the first week.

For those women who did give birth at home, they preferred to be alone with the midwife, usually used a lying position, and were given no medicines to help with the delivery. The umbilicus was tied, cut, and the end cauterized with wax dropped from a burning candle or with a balsam preparation. The umbilical cord and after-birth were then buried near the house; for some the only prohibition was that they be buried deep enough to prevent the ever-present dogs from getting at them, for others that they be buried in the kitchen in order to prevent sharp after-birth pains. If the baby was not bathed immediately in warm water he was wiped with oil and then bathed the next day. Thereafter infants were bathed every third day, but older youngsters followed the general village custom of a Saturday afternoon bath. Mothers waited a week after giving birth for their first bath, also in warm water, with or without strengthening herbs. They tried to remain at home, resting, for forty days, but this custom was followed only by the wealthiest families. Others, who could not afford such luxury, tried to rest for about twenty days, and delayed bringing their new infant to church until the Sunday following his fortieth day of life.

Knowledge of a new birth spreads rapidly through the community by means of non-malicious gossip. However, it is not celebrated until Baptism, which takes place sometimes during the second six months of life if the baby is healthy but earlier if there is any danger of his dying; baptism is generally preferred to medical attention when the parents of a sick infant can not afford to pay for both. Unbaptized infants are treated the same as the baptized, with the exception that some people feel that the former should not be photographed for fear of some ill befalling them.

Infancy

After birth babies are dressed in a shirt and a skirt made of diaper material or rags, the latter bound in place with a sash. During the second or third month diapers, still bound rather than pinned, are substituted for the skirt. Soiled diapers are washed, but, except for the wealthiest families, diapers which have been dampened by urine are dried and reused.

Girls' ears may be pierced as early as the third day of life, or at any time thereafter through adolescence. Those who pierce the ears during the first days feel that the girls will feel no pain; others wait for them to express a desire for earrings. The piercing may be done with either a somewhat sterilized needle and thread, the thread being left in the hole to keep it open, or with special piercing rings, which are also left in place.

Girls' hair is rarely cut, especially during the first few years of life. Boys hair is not barbered until it has grown "quite long," well after the sixth month of life. Most parents are reluctant to cut their baby's nails (or hair) during the first six months for fear of mutism or retarded verbal development.

Some of the richer families have commercially manufactured cribs for their babies, but most supply two other types of sleeping accommodations. The indoor cradle is a shallow box, made especially for the purpose, which is hung near the mother's bed. It is padded with soft cloths, and the baby is covered with a small blanket and mosquito netting. For sleeping during the day out of doors, a temporary hammock is made by tying two lengths of rope between two posts, separating the ropes by means of sticks at the head and foot, and wrapping a large blanket loosely over, under, and over the ropes again; the baby is then laid on the blanket, his weight holding it in place. The hammock, with the baby in it, is then covered to keep insects and daylight off him, and he is rocked to sleep.

The only lullaby we were able to discover is one which derives from the Christmas celebration.

Almost all women nurse their babies from the third day of life; until the milk comes in strongly babies are fed sweetened teas. Nursing is done upon demand; the first response to almost all crying is to offer the breast, either for nourishment or as a pacifier. Women cradle their nursing children, sometimes in their arms, often in a rebozo. The rebozo is an essential part of a woman's dress (only some of the richest women now go out on the street without one); it is a specially woven shawl, about two by six feet, with long, delicately tied fringes at both ends, and is used as a head covering, for warmth, as an adornment, but most importantly, for the carrying of infants. Babies are carried in it; put to sleep in it when away from home, cradle, or hammock (at which time their heads are completely covered); and nursed in it (at which time both the baby's head and the mother's breast are covered). With the rebozo babies can be tied on their mother's back but more often they are held in front, in a somewhat upright position, close to her heart. The few women who do not nurse their babies use commercially available powdered formulas. Very few do not nurse because they find it uncomfortable; others describe them scornfully as "those very delicate modern women." One grandmother recalls with much sorrow and some anger that one of her babies died because her milk supply failed due to a scorpion bite. A nursing mother must be more careful about her diet and activities than when she was pregnant. She should avoid sour fruits and nuts and should not go out in strong sunlight for fear of heating and drying her milk.

At about the age of six months infants' diets are supplemented with corn gruel (atole) and soda, then broths, and later semi-solid foods such as softened tortillas, noodles, or rice. When they are able to grasp well and have enough teeth for chewing they are given tortillas and other soft solids such as beans which form a regular part of the adult diet. Feeding is always upon demand; there is little attempt to accustom children to adult meal schedules for several years, nor are they expected to eat chile at this time. *

Most babies are nursed for about a year or a year and a half; others have been known to continue for as long as three years although this is not an approved custom. By the end of the first year it is expected that the mother has become pregnant again and has decided to stop nursing in order to protect the new baby's milk. A common form of weaning is to send the baby to his grandmother's home for a few days. He is already accustomed to her home for he has visited there often; only the absence of his mother and accustomed milk is new. He is treated very gently, indulged, handled a great deal, and warmly soothed, until he apparently forgets his need for the breast. After a few days he returns to his mother, who also soothes and indulges her by now chipil (jealous) child. Another, and older, form of weaning is to tell the baby that the breast is disgusting or has chile, and that he no longer wants it; mothers may even smear some unpleasant tasting substance or chile on their breasts and then let the baby nurse to show him that he no longer likes it. This is practice followed by many Meso-American groups but not preferred by Cueveras.

Some people interpret the baby's first cry as the first true sign of life, others consider that it begins with the first movements in the womb, and a few, following conventional Catholic dogma, consider the moment of conception as the beginning of life. One older woman, a descendent of the hacienda peons, said, "A baby's first cry shows all the suffering in the world; he is alive from the time he is born and has awareness (conocimeinto) after a year."

Beyond this first wail all crying is discouraged. As soon as a baby cries the breast is offered; for children who have been weaned a commercial nipple-shaped pacifier is substituted. Crying infants are also fondled, rocked in the cradle or hammock, bounced in the rebozo, or distracted, and the cause of their complaints attended to as soon as possible. They are never, as far as team members were able to discover, teased to the point of frustration nor otherwise induced to cry.

Most babies appear to be silent and serious most of their waking time. Whether in a rebozo, hammock, or in a small packing crate on the floor near their mothers, they appear to be relatively immobile but busily watching all that is going on about them. Apparently passive, their motor development is nevertheless stressed more than their verbal; first steps are recognized and encouraged

---

* Cueveros are little interested in the exact measurement of years. They expect their children to take on more mature activities as they show themselves able; by the time their children are about five most parents have forgotten their ages. Because of this vagueness and because there appear to be no sharp differentiations from one stage to another, we have been correspondingly general in assigning specific ages for certain phases of development.

but first words tend to be ignored, for babies are considered able to speak only after they can form simple sentences. They are expected to walk at about the age of one year or shortly afterward, but not to speak until several months later.

It is at this stage of development that they tend to score significantly higher on our developmental tests than do our own youngsters (see Chapter III). If maternal deprivation tends to inhibit development, may it be that maternal stimulation, such as enjoyed by these infants who spend almost all their waking hours in the midst of family activities and often in direct physical contact with another person, fosters more rapid development?

Early Childhood

Parents enjoy their children most during their first few years, when they tend to be docile and obedient, rarely challanging adult authority. It is during the early childhood years, from about ages two to seven, that youngsters learn their role of being seen but not heard in the presence of adults and it is during this period, when the demands of their clearly authoritarian society begin to press upon them that their development begins to lag behind that of our children (see Chapter III).

Much of their care and education is now left in the hands of older siblings and other substitute parents; mothers are generally occupied with younger babies and household tasks, and fathers are away from home most of the day. The substitute parents teach them, usually by example and some show of impatience, to dress and toilet themselves and take care of their other simple needs. There is now less show of affection between parents (or substitutes) and children, or among children. Most adults appear to be more concerned with the obligations of parental roles than with their pleasures; this becomes increasingly true as children grow older and more independent. Mothers tend to be more responsible for the care of their children than fathers, some of whom meet few of their responsibilities; less than 60 percent of the families represented in the sample (41 of 70) were headed by responsible fathers.

Parents rarely play with their children and rather consistently favor the youngest; obedience is stressed above all else and many fear that disobedience and loss of respect will follow upon less formal parent-child relations. They rarely praise their children, but punish failures by scolding and sometimes hitting. Bribes and threats are also used frequently, but often not carried out. By the age of three or four most children have learned that there is a difference between what their parents promise and actually do, and that the social graces of the moment, especially a show of obedience, are of utmost importance.

Little children are free in expressing their anger, physical pain, or sorrow, the first through mild temper tantrums (berrinches), the latter through crying. Adults are deft at avoiding tantrums and quickly soothe crying, but child nurses often lack these skills; they are generally blamed and berated for making their young charges unhappy, for adults do not want children to show tempers. Youngsters are taught to be fearful of adult disapproval (often reinforced by corporal punishment for older children), disapproval by the saints, the covetousness of devil-like figures who may kidnap them, animals that may eat them, and of realistic physical dangers and discomforts such as fire, chile, or certain insects. They are expected to obey their parents unquestioningly and to obey substitutes meekly.

As is true for most societies where unquestioned obedience is an ideal, people in subordinate positions, including children, learn a number of strategies for pleasing authority figures. Tattling is frequent, as is whining, and children learn to protect themselves from siblings' injustices by threatening to complain to parents. The same tattling technique is later used in school with considerable frequency to gain teachers' approval. Quarrels, with siblings or others, tend to be short lived because of the ever-present threat that parents, who are quite likely to punish, will hear of the dispute. In the subordinate position modesty and humility are the rule, not aggressiveness or boasting. For children the only socially acceptable outlet for hostilities or for a show of ascendence is with pet animals (generally dogs); to the extent that the animals allow it they tend to be mistreated by young children.

As has been pointed out earlier (Chapter I), attitudes toward truth are also somewhat different than our own; for Cueveros it is more flexible, less precise, less important than ettiquette and good social relations. Parents are imprecise with their children from the beginning, and children respond in kind. When an infant reaches out to something his mother does not want him to touch (for example, a fragile object, or one which may harm him) she usually says pica (it bites) or quema (it burns); sometimes she reinforces her word by gingerly touching the object and then withdrawing her hand rapidly as though it had been hurt. Bribes and threats (especially the latter are not carried out much of the time with little children) are also frequently used for gaining momentary results such as sending little children out from underfoot or for keeping them from interfering with adult conversations. A frequent means for diverting the attention of a three or four year old who is (literally) hanging on to his mother's skirt, is to give him a quinto (the smallest coin) and send him to buy himself a piece of candy or chewing gum at a near-by store where he is met with sweetness and attention by the shopkeeper.

Stealing is also handled with more attention to expediency than to strict moral principles; the consequences for getting caught far outweigh the sinfulness of the act itself. Within the family sharing and cooperation are stressed and few things are considered to be individual property; acts which might be labeled stealing in another culture (for example, taking a parent's tool or a sibling's toy) go uncommented in the village. The most sinful act of all which a child can commit is to disobey his parents.

Despite all of the above, and despite widespread malnutrition and intestinal parasites, little Cueveros appear to be quite contented with their lot. They spend most of their day playing quietly near their mothers, seldom complain except to whine a few times a day that they are hungry. For the most part their complaints are still tended to quickly. When not in the company of their mothers they are watched over by older siblings or other substitute parents. When not playing they seem to watch what is going on about them with considerable interest and attention. Their play is generally imitative and is performed alone or in the company of a sibling close to them in age. All but the richest have but one or two objects which we would consider toys, always commercially manufactured and usually of cheap plastic; the little cars, dolls, or other toys they do have they seem to use over and over again, seemingly without tiring of them. These they supplement with tin cans, old spoons, sticks, stones, and other scrap objects they find lying about their yards. Their play is rarely very imaginative, and they generally seem quite aware of the gulf between their creations and reality.

Informal Education

Although all children now attend the village school for several years, formal education continues to occupy a somewhat peripheral role in the lives of most Cueveros. The most important goal of informal education is the acquisition of adult economic skills, as it is almost universally. For all villagers this means agricultural skills; for males they are of primary importance, for females housekeeping and child rearing skills are primary. Keen observation and accurate interpretation of nature and people are essential for all. Social skills and ettiquette are almost as important as economic skills for adult success.

Beyond this, all children are expected to learn the formal religion and informal lore common to the culture. They learn this largely through hearing adult conversations and attending religious ceremonies in and out of church; some is learned through catechism classes in the village church. Many of the children, especially the girls, enjoy participating in religious activities; indeed, such participation serves as one of the few traditionally aesthetic and creative activities in the village.

The most important skills which boys must learn include all of those involved in the cultivation of sugar cane, rice, corn, beans, tomatoes, onions, and other vegetables; the care and use of farm tools such as machetes and sickles; the care of farm animals and skill at plowing with oxen; fruit culture; and the skillful application of fertilizers and insecticides. They should also learn some cursory housebuilding and house maintenance tasks so that they can construct their own shelters if need be.

Girls must learn to cook; care for babies; clean house; wash and iron; sew, mend, and embroider; care for house plants, kitchen gardens, and small domesticated animals; and also have more than rudimentary skill at most of the men's tasks.

All the keen observing which infants and young children have engaged in has stood them in good stead, for observation and imitation are the principal learning techniques used in the village. Sometimes parents and other teachers give cursory verbal instructions (often consisting of little more than, "Watch how I do it.") but few explanations; indeed they often reject inquiries, for here, too, they expect unquestioning acceptance. Those children who master these learning techniques tend to do well in school, where memorization is stressed and where questioning is also seldom tolerated. In addition to observing and imitating, children absorb much information by listening to the adult conversations and gossip which surround them.

There is little direct external reinforcement for children's mastery of a new skill. Parents expect their children to have observed well before attempting something new, but they are generally quite patient and respectful in allowing ample time and latitude to accomplish a new task or some part of it. For example, a four-year old girl was observed attempting to sweep a patio with an adult-sized broom. Her mother, who was sweeping the porch at the same time, allowed her to finish, made no attempt to hurry her, nor did she resweep the yard. She made no comment about the performance, but the little girl knew she had done a woman-sized job. Had the child been older the mother might have pointed out places she had missed, impatiently, showing that she expected a more competent performance. Parents rarely expect more adequate performances by their children than they have already shown themselves able to perform, but when they fail to meet their standards they tend to show impatience, scold, and may hit (often with a leather belt for serious infractions). About the only positive external reinforcement we were able to discover was when parents commented to outsiders in the presence of a child that he had mastered a particular skill some time previously. Rather than this verbal reinforcement, parents did show much need and reliance upon the help of their school-aged children. An almost universally expressed ideal in the village was for a school-aged child to be a serious, steady, and responsible worker, one who would not waste time in play.

Since Cueveros are keen at observing and comprehending people, since they feel that children are born with their basic character traits already present, and since they do not feel that it is within their power to remold personalities, they accept individual differences among their children readily and unquestioningly. Most do feel that they can help rid their youngsters of some of the worst aspects of their behavior (guitar el malo) although a few of the most loving adults compare children to plants, the more tender and nourishing care they are given the better they will grow. Cueveros believe in no rigid time schedules for children's development, but rather raise their expectations for competence as youngsters improve their skills. This is in sharp contrast to our belief in the plasticity of children's personalities and in parents' responsibility for the adult characters which emerge.

Formal Education

Cueveros begin their formal education by attending the public kindergarten, which was housed in the village meeting room (Ayudantía) during the time of the field study. One year of attendance is mandatory for children over the age of five although some parents do not send their children, especially their boys, until they have reached six; others send four year olds. They tend to appreciate the baby-sitting functions of the kindergarten more than any of its others, although some also feel that it serves an important purpose in helping children make a successful adjustment to the more formal behavior standards of the primary school later on; no importance seemed to be given to any subject matter the children might learn at the kindergarten.

The kindergarten was taught by a licensed educadora; class hours were from about 9:30 to noon; the curriculum consisted primarily of stereotyped art work and occasional dances. The children were expected to sit quietly most of the morning while the teacher talked at them in a strident voice, ordering this one and that, scolding first one and then another for restlessness. They tended to comply with her orders; no act which team members could label as outward defiance was noted. The teacher complained to team members about the lack of equipment and supplies but made no use of the toys and art supplies which we gave her; it was our impression that she was unsure of how to handle them.

After attending kindergarten for at least a year and having passed the sixth birthday, little Cueveros are enrolled in the village primary school; at the time of the field study it was housed in a specially built adobe five-classroom building which became quite overheated during the middle of the day.

A major concern of Mexican primary education is to cover all aspects of fundamental education during the early primary years; less than four percent of all primary aged children were enrolled in grade six in 1959 (3). This concern had led to a highly formalized course of study, only somewhat related to children's needs. In an attempt to equalize education throughout the country, and to bring the curriculum somewhat more into line with children's experiences, one course of study, disseminated through a nationally distributed set of textbooks and teachers' manuals, was prescribed for the entire nation, rural and urban, mestizo and Indian, wealthy and poor, in 1961. It puts national needs, such as economic development, above those of individuals, and continues to concentrate most aspects of fundamental education in the early primary grades (17).

At the time of the field study only four classrooms were in use, one each for grades one through three, and a combined fourth-fifth grade group. The three sixth-graders in the village attended a school in a near-by town; we do not know how many more would have attended if they had not had to pay bus fare.

Although class size is nationally stipulated at 50, attendance averaged at between 25 and 40 daily per group. The classrooms were small and very crowded, often lacking sufficient seats and desks for all students; what furniture there was was often in poor repair. Beyond the nationally distributed texts, classrooms contained one or two posters of national heroes (never the local hero, Emiliano Zapata), and perhaps a teacher-made chart or map; the walls were quite bare by our standards. At the front of each classroom was a chalkboard with carefully hoarded chalk and perhaps a chair and table for the teacher. The school plant boasted a large yeard, an outdoor theatre, bathrooms, and a swimming pool which was usually empty. Since the time of the field study a new, larger, and more comfortable building has been constructed in a part of the yard and the kindergarten has been moved into the largest of the classrooms of the older school.

All children attending the school were expected to purchase their own notebooks, pens, and pencils, as well as one new uniform yearly for the Independence Day celebration. Kindergarten children were expected to contribute two to three pesos monthly for supplies, as well as to buy a new uniform for the Independence Day celebration. Total costs averaged about 70 pesos per child; this was prohibitive for many of the poorer families, especially those with several school-aged children.

At the time of the field study all the primary school teachers were normal school graduates or the equivalent. The director, who taught the oldest group, and his wife, who also taught in the school, lived in the village. All the other teachers, including the woman who ran the kindergarten, commuted. All aspired to what they considered to be more desirable positions, namely schools located closer to the state capital. For all teachers attendance was sporadic and punctuality varied as errands and other matters called them away. During the year of the field study the first grade teacher was in poor health and was not replaced when she had to leave; similar practices were not uncommon in the area.

Teaching methods were usually quite authoritarian. Teachers generally pitched their voices quite stridently, as though trying to outshout one another, and appeared to be reciting the content of their lessons by rote, as though following some prescribed formula (none was ever discovered by team members). They stressed obedience and memorization above all else. At the same time they gave the children considerable latitude when left alone in the classroom; it appeared as though they had no real expectations that the children would be quiet or studious without their continual surveilance.

With teachers present the children tended to respond passively, compliantly, as though patiently waiting for the teacher to finish and leave the room for a while, for recess, for the end of the school day. When the teacher was not in the room they socialized quite a bit among themselves, became somewhat louder, but continued generally quiet and passive by our standards; on occasion they helped one another with some of the harder assignments.

The following is a running description of about 30 minutes of classroom observation in a first grade:

> The weekly assembly is over and the teacher, a woman in her early twenties, has already taken attendance.
>
> Teacher: We're going to work very quietly, because if not, how will it sound, nice or ugly?
>
> Children, calling out: Ugly.
>
> She then tells them that the observer will be working at the back of the room and with noise will not be able to work. She rearranges some furniture, trying to make more room and announces that the lesson will consist of the letters of the alphabet. Many children call out that they do not have their notebooks. She responds that they do not all have notebooks because they did not need them last year, nor earlier this year (the school year is now in its third month), but that they will next year. (Somehow, once the

lesson began, all appeared to have notebooks in which to write.) She also reminds them that they should bring, daily, 20 grains of corn and 20 red holly seeds (these grow in the school yard and are in season at the time of the observation). The formal lesson now begins.

Teacher: What does the frightened child say?

Children, calling out: Aaaaah.

Teacher: Yes, Aaaaah (in Spanish both the name and the sound of the vowels are identical). She then writes the letter a on the blackboard, small case, cursive.

Teacher: What does the deaf man say? What sound do we make when we inhale the smoke of the cooking fire?

Children: Eh, eh, eh.

Teacher: Yes, eh. (She writes a small case cursive e on the board.) What does the little mouse say?

Children: Ee, ee, ee.

Teacher: Yes, Ee. (She writes a small case, cursive i on the board.) What sound does the train make (there is no train in or near the village)?

Children: Oooooooh.

Teacher: Yes, oh (Writes a small cursive o on the board.)

The same routine for the letter u is missed because a child enters.

Teacher: Oh! How early you are!

She explains to the girl and to the observer that her name has already been submitted and that the parent of a truant child must pay a fine of five pesos (she does not mention that a day in the town jail, on the part of the parent, may be substituted for the fine). She then tells the girl to sit down, arranges a place for her in the overly crowded room, and continues with the lesson.

The consonants and vowels through the letter j are now listed in alphabetical order, with the teacher naming them and writing them in small case on the board. She encourages the children to call out the names and trace them in the air, which they do.

Her next instruction to the class is to write a line of each letter, pronouncing the name and sound of the letter each time it is written; other than this they are not to talk. They are not to throw papers on the floor, but in the basket. "I don't want to see any papers on the floor." As the children begin writing she walks around the room, looking at their work. To a boy she says, "Good, but smaller, and they shouldn't go out of the line." All the children are writing, almost silently.

One girl leaves her place. The teacher tells her to sit down and complains to the observer about the lack of furniture. To the class, affectionately, "Everybody sitting and writing. Is the sun bothering you Julio?" She closes the window and sharpens a pencil. "Jauna, what's that, what's that? Those who talk will have to stand in the middle of the school yard. Freddy, talking is what I like least." She changes a girl's seat, but there are still three cramped into desks meant for two, while some write on their laps, and some share chairs (others have brought their own chairs from home). "Hurry up, Lolly. You're all going to go up to the board to see the letters, eh?" Her voice has become more and more strident.

She steps out of the room and the children start whispering, more and more loudly, although they never do become what we would consider noisy. As soon as the teacher steps back into the room they quiet down. "Everybody should be studying. Those who don't know, ask me." Lolly asks for the sound of a particular letter and she tells her.

Twenty-five minutes after the tardy child has entered her mother comes to the classroom door. The teacher tells her, half apologetically, that her name is already listed. The mother leaves. Turning to the group, "You're studying, aren't you? I'm giving you time to study because, as you know, after this you'll go to the chalkboard, and if you don't know your work there'll be no recess for you. Lolly, study. Lolly, study. (Lolly is restless, out of her seat.) Lolly, study, or you won't know your work. Lolly, this is the last reminder, or I'll take you by the hand and outside you'll go." To the class as a whole, "Do you want to be like the second grade and make me shout? Be silent and listen (she says this as though to be like the disorderly second grade group is a horror not to be thought of). Lolly, bring me your notebook and your pencil. You haven't finished, have you? Finish." She places her at the front of the room where she can lean against the wall. Another child asks the name of a letter; she tells him.

> "Gabby, have you finished, little friend? Betty (to a girl who is about 9 or 10), you're much older and should know this work already; if not, there is a still younger group (kindergarten)." She sits on a child's desk (she has no furniture of her own) and corrects a boy who uses the dialect term harto instead of mucho in a conversation with his seat-mate; she does this softly, directly to him.
>
> "Now, let's see. To the board, Lizzy. Now all your little mouths shut tightly." She calls children to the board, one by one, to name the letters as they point to them with a small branch. A boy misses; she has him do five lines each of g and j. She has the next child do five lines of j, telling him, "Every time you write it, say its name."
>
> The next child does not know b or c. "Oh, my God, stay there." To the next, "Carramba, here's another one who doesn't know g." There is a fixed order in which the children come to the board and then have their notebooks graded. "Lizzy, there'll be no recess for you today because you're not sitting right, even though you know your lesson." However, almost all her attention is directed toward the child at the board, her voice becoming more and more strident. To one row of children she says, "Remember, that row over there is the row of burritos (little asses) and you were seated here because you are intelligent. And now, look, they are telling the answers. If they know the work I'll put them here and you there." She repeats this to individual children as they answer, correctly or incorrectly. When Josie does not know a letter she says, "I'm here to tell you the lesson as many times as you want, but I don't like liars who say they know the work and then don't." Josie cries a minute and then dries her eyes. Thus the writing lesson continues, followed by arithmetic, and then.....recess!

This teacher was particularly admired by parents in the community for her dedication, sense of responsibility, and eagerness to help her pupils learn.

The high point of each school day for most children is recess, when they can socialize freely; it is the one time in the day when play is legitimate for all. Most children, especially the girls, whose responsibilities at home were more demanding than boys', preferred attending school to staying away.

Attendance, while strictly enforced, was poor by our standards. Children could be excused for a variety of reasons, including occasional work for parents. At the same time parents who kept their children away for reasons other than poor health and who had not received prior permission from the teacher were punished by the village authorities (as indicated above). All villagers questioned appeared to feel that adequate school attendance, especially among the poorer villagers, could be maintained only by punishing parents who kept children from school without good cause.

Throughout Mexico promotion from one grade to the next is based upon the passing of national examinations. The failure rate is high. In 1959, of all children attending public schools throughout the nation, almost half could expect to fail at least once and 20 percent to fail at least four times; about half of those who failed four or more times had never progressed beyond first grade (3). At that time this was attributed both to poor curriculum (the statistics cited above were originally gathered to support the need for extensive curriculum revisions) and to continuing need for child labor, especially in rural areas.

The situation in the Las Cuevas school tended to follow the national pattern. One mother, from one of the poorest families in the village, boasted to a team member that her daughter had finished sixth grade without ever having failed; both the boasting and the achievement were unusual.

Later Childhood

By the time a child reaches pubescence he is expected to have acquired all the social skills in more than rudimentary form, and all the economic skills which he is physically strong enough to perform. The early pubescent years, prior to marriage, should be spent in refining these skills so that when the young people do marry they will be ready to establish homes of their own.

As they grow through the later childhood years they exchange much gossip with their parents and more conversations, generally with the parent of the same sex. They should know and follow all the rules of good manners, such as shaking the hand of every newcomer to the house, greeting him with "good morning, good afternoon, or good evening" as the time of day may indicate, dusting off a chair, and offering it to any guest who steps upon the porch. Upon visiting others they should know upon what occasions it is proper to step upon the porch (which formalizes the visit), to greet everyone present upon entering and leaving the house, and to shake the hand of everyone present if it is a recognized visit. They should know to be silent and relatively still in the presence of outsiders and to avoid interrupting their elders. They should be free in the use of "please" and "thank you" in their many forms, and to know what style of language, including the formal or informal form of "you" (usted or tu) is correct in each situation. They should refrain from cursing in the presence of figures of high authority or in the presence of teenagers or less prestigious adults of the opposite sex. From about the age of six they should refrain from crying for minor physical hurts; this is especially true for boys.

As pubescents they may begin to smoke and drink alcoholic beverages. Both are relatively expensive and should be taken only on special occasions and then in moderation; this is especially true for girls. For boys smoking and drinking were counted among the accoutrements of machismo, which is becoming less attractive to many as ideals of responsible parenthood and possibilities of economic advancement become more attainable. Young men are coming more and more to exhibit their masculinity by playing on the village basketball and soccer teams; since the time of the field study a rock and roll band has been formed.

Gambling is a relatively rare activity in Las Cuevas. Some boys play a penny pitching game (antojitos) in which the most skillful player must also have luck in order to win any money; it is played with the smallest coins in circulation. Most gambling among youngsters, however, is restricted largely to the yearly bingo games at the pre-Easter fair; both children and adults participate but spend little money.

During later childhood boys and girls separate for most activities and tend to avoid one another. Most teachers separate them in school and their play is almost exclusively with members of the same sex; a notable exception is organized volley ball games during recess when pubescent youngsters form into very cooperative teams to play one sex against the other.

A typical day for a school aged child begins shortly after dawn. Girls are roused from their sleep to begin household chores such as preparing breakfast, caring for younger siblings, or sweeping. Boys may be allowed to sleep later but they, too, generally have early morning chores to do. At the time of the field study there were water taps on most street corners and storage tanks in most yards; one of the most common daily chores for children of both sexes was to fill the tanks by carrying pails of water. Breakfast followed; it generally consisted of tortillas, perhaps some beans, washed down by sweetened coffee or corn gruel (atole). By the time they gathered up their books and headed for school at nine in the morning most youngsters had been up and busy for several hours.

In school they sat quietly for about two and a half hours, occasionally writing, waiting to be freed for recess. At this favorite time of the day, at about 11:30, most tried to buy a snack of cookies or cake and some soda, as well as gossip and run around playing with their friends. Other than volley-ball, most games were of very slight organization and quite cooperative in spirit. Many were games of skill in which each participant tried to improve his own skill rather than outshine his friend's; in some respects their play resembled the parallel play attributed to much younger children. Skills included running, climbing, and swinging from trees for younger children of both sexes; marbles, tops, and baleros (tossing a tin can on to a stick) for boys; and jump-rope, hop-scotch, and gossiping for girls. A further description and analysis of the games was published earlier (14).

Recess ends at about noon. First graders return for another half-hour of class, second graders for another hour; the older students may not be dismissed until 2:00 P.M.

Upon returning home girls help prepare and then all eat a meal consisting primarily of tortillas, beans, and chile, perhaps with the addition of a small portion of a cooked vegetable, an egg, rice or macaroni; meat is eaten about once a week, in a special mole sauce.

Boys are expected to go out to gather fire-wood in near-by thickets and bring it home on tump lines; either boys or girls may be called upon to carry hot lunches to their fathers and brothers who are working in the fields, and to run many errands.

Later in the afternoon girls are expected to continue with household chores and to sew and embroider; they have relatively little opportunity to play, although on occasion a few may be seen playing or gossiping in the street, often while caring for younger siblings. Boys, too, may be called upon for further chores, to tend the animals, care for younger siblings, or be sent to work in the fields with their fathers and older brothers. However, they do have more free time than girls because expectations are lower and they are more indulged. Some families make an effort to provide their children with time and a place for studying; others, generally those who see little use in schooling, do not.

In the early evening some youngsters beg permission and a few cents and go to watch television in the Town Hall; others remain at home, continuing their afternoon activities. The evening ends with a light supper of coffee (with milk in the richer families), sweet rolls, and perhaps more tortillas and beans. As children feel sleepy they lie down on the bed they share with their siblings and perhaps their parents. Night generally comes early to Las Cuevas.

Most girls are now forewarned by their mothers and older sisters for the first menstruation; they are told to not be afraid and that they will now be able to have babies. Although women employ euphemisms of "buying a baby" and of pregnant women being "sick," more reliable knowledge of the human reproductive cycle does not escape these peasant children who sleep in the same room with their parents, sometimes in the same bed. From the point of the first menstruation girls are called señoritas and properly should be chaparoned at all times, although this is not always the case with the poorer girls. Mothers make increasing demands upon them for work at home, and, when economic need dictates, send them to do housework for richer neighbors or try to get them jobs as maids out of the village. Schooling ends at this time for most girls; only the richer ones are encouraged to continue or to aspire to roles other than those of housewives. This is a time of stress for many girls; continued schooling means greater freedom (it is related to productive character traits), yet most give up hope for further schooling and turn to thoughts of romance and marriage.

Childhood comes to a formalized end for many girls with the celebration of the fifteenth birthday (this is one date most parents tend to remember). They are dressed in wedding-style dresses, given a special mass, and a party. Even the poorest families attempt to celebrate the fifteenth birthdays of their unmarried daughters; many women remember this as the happiest moment in their lives.

Boys, too, spend their later childhood and pubescent years building economic skills. The richer ones continue with their schooling; the poorer ones spend increasing time working in the fields, attempting to establish themselves as reliable earners.

As youngsters approach pubescence they begin to form friendships which extend beyond the lines of family relationships. The small groups of friends spend time together in and out of school, help one another with their work, visit in one another's homes, gossip together, tease one another, exchange (mis)information about sex and other vital matters, and help one another manage the intricacies of courtship. If rivalry over a suitor does not occur, or some other equally destructive event, the relationship will last, ideally, for life. While never as intense as adolescent friendships attributed to our culture, it does continue, men helping one another with work and meeting together in public places, women, although now heavily involved in their own homes, gossiping with one another when they meet on the street, in church, or in other "suitable" places. These adolescent friendships may become formalized through co-god-parent relationships (compadrazco); indeed, one common synonym for gossiping is comadreando, a word clearly derived from co-god-mothership.

Courtship activities become increasingly important during the teen years; they consist primarily of stealthy exchanges of glances, words, and later highly formalized letters. For the poorer youngsters these activities generally culminate with a young couple running off to another town to spend a night or a few days. Upon returning to Las Cuevas they are accepted as married and either move in with one of their families or set up housekeeping on their own. Parents may protest or express disappointment at this type of marriage, but they generally accept it. Such unions are rarely legalized at the Civil Registry nor formalized in church. Some couples do not go as far as the next town but merely move in to the boy's or girl's house. Others maintain more casual sexual relations' which may or may not terminate with a girl's pregnancy and may or may not lead to consensual marriage. A woman who is known to have had extramarital relations is not barred from marrying at some later time.

The richer youngsters delay marriage and seek legalized relationships formalized with church services. After a richer couple has decided that they would like to marry the boy asks formal permission of the girl's father to become her sweetheart (novio). If accepted the period of engagement may last several years, during which time the boy may visit her family frequently but may never be left alone with her. It is felt that only by constant vigilance can the girl's virginity be assured.

The marriage itself is quite costly, which is why few aspire to it. The novio must pay for two public banquets, one or two small musical bands, a mass, the wedding dress (which must always be new and generally costs over 1,000 pesos) and must also build and furnish his new house. During the time of the field study only two such marriages took place in the village; in both cases the grooms had worked as migrant laborers in the United States for several years in order to save the thousands of pesos needed.

With marriage childhood is over and the young couple assumes fully adult roles and status in the community.

CHAPTER III

THE COGNITIVE VARIABLES

The traditional cognitive measures used in this study included school achievement and three I.Q.'s: Draw-A-Man, Ravens Matrices, and the Stanford-Binet. Of these the first two were chosen because they tap non-verbal skills and have been used in a number of cross-cultural studies. The Stanford-Binet was chosen because it taps a variety of skills, is used extensively in this country and could be administered to very young children in the Cattell extension. In addition we looked both quantitatively and qualitatively at other cognitive variables. These included equivalence, difference, and moral judgements, and attributions of life, causality, and worth (both goodness and monetary).

School Achievement

School achievement scores were computed for each child enrolled in the village school at the time of testing. In Mexico children have traditionally been promoted from one grade to another on the basis of their end-of-year scores (1 to 5 fail, 6 to 10 pass). The village school reflected the national pattern of frequent failures (see Chapter II), so that ages varied considerably within each class. In order to obtain a measure of school achievement for each child in the sample it was necessary to take into account both his end-of-year score and his chronological age in relation to that of his classmates. This was done by means of the formula

$$\text{Achievement} = \frac{(\text{final grade})\ (\text{Mean age of class})}{(\text{Child's age})}$$

Achievement scores were developed for 142 children, including 63 in the sample (other sample children over the age of seven included seven who were continuing elsewhere). For the entire group scores range from 2 to 9, with the mean at 6.6(SD = 1.26); for the 63 in the sample the mean was 6.9(SD = 1.30; t between sample and non-sample children = .02,NS). For the sample group the achievement scores were related negatively to age ($r = -.28$), but not to socioeconomic status ($r = -.02$).

Draw-A-Man (Table 1)

As mentioned previously, the Draw-A-Man was chosen because it taps non-verbal skills and purports to evaluate the ability to form concepts (9, 10). It was administered to 107 children attending the village school. In order to assure a reasonable degree of privacy for each child half a class was tested at a time, the others being sent out to play; copying was discouraged but did occur in a few instances.

The drawings were scored according to norms developed in Puerto Rico (9) since it was felt that the village children more closely resembled the islanders than either Harris's or Goodenough's normative groups. Against these more relaxed standards the village children tended to score poorly, with the median falling in the second quartile (Mean = 2.8), and the results skewed negatively (Chi-square between scores and a normal distribution = 14.5, df = 2, $p < .01$).

Both Goodenough and Harris caution against the validity of Draw-a-Man I.Q.'s for children less experienced with drawing than the villagers. The validity of the original I.Q.'s was therefore checked by testing 75 first and second graders a few months later immediately after giving them four consecutive days of uninstructed practice in drawing people at work and play. The final drawings were significantly better than the first ($t = 4.46$, $p < .001$). In contrast, a corresponding experiment with 199 children in a private American school in Mexico City resulted in no change at all (Modiano 1962). This threw the validity of the village I.Q.'s into question.

On the basis of the above experiment we can hypothesize that village I.Q.'s would be higher if the children had been so surfeited with drawing that their inclusion of scoreable points could be attributed to conceptual growth rather than mastery over drawing techniques. While we cannot hypothesize a more valid level of distribution for this group on the basis of their lack of drawing experience we can, nevertheless, examine the results in terms of relationships to the other cognitive variables employed.

Raven's Progressive Matrices (Table 2)

Raven's Matrices were also chosen because they tap non-verbal "logical reasoning" (26). The test was administered in block form to 68 children aged 6 to 12 in the random sample. Since the village children had had little experience with tests of this nature, it was decided to accept their last rather than first choice and to score the test according to the norms of the book test, which are based on final choice; block norms are based on first choices.

To score well on the Ravens the child must be able to observe small variations in patterns, and, increasingly so in the last matrices, understand their abstract geometric progressions. Given the "extra measure" we allowed for scoring, the children tended to do poorly, although the results were not significantly different from a normal distribution (Chi-square = 4.70, df = 2); almost a quarter of the group scored in the lower quartile, but only 15 percent in the upper. There was a slight positive relationship between I.Q. and socio-economic status (r = .29), but non with age (r = -.09).

Stanford-Binet (Tables 3-7)

The Terman-Merrill (99) and Cattell Infant Intelligence (2) scales were administered to 27 children aged 7 and 10 from the sample group and 44 primarily drawn at random from the child population aged 6 months to 6 years (see Chapter I). Nineteen children were tested on the Cattell (task instructions and questions translated into Spanish by the Project Director) and the rest on Form L of the Spanish edition of the Terman-Merrill. Infants were tested in their homes; although members of the family watched, in only one case did a relative interfere. Older children were tested individually but, especially for those not in school, older siblings were present in our playroom-testing center; they, too, rarely interfered.

The results on the tests are striking when related to age. Up to the age of two children tended to score considerably higher than the normative sample, with none below normal and over 40 percent above 110. Between the ages of two and four I.Q. dropped sharply, so that more than half the children scored below 90 and only one above 110 (see Table 3).

Is it that the children became stupid, failed to develop, or that the tests for babies tapped the skills they did develop while the older tests did not? In order to answer this question let us look at those sub-tests for two- to four-year olds on which children failed some items but passed others, tests intermediary between the basal age and the age at which a child failed all items. The tests were separated into four categories according to the principle ability necessary for passing:

1. performance (i.e., manual dexterity, following commands)
2. verbal-abstract (i.e., vocabulary, analogies, counting, repeating digits or sentences)
3. observation (i.e., recognition, comparison, description)
4. comprehension (of social situations)

The analysis (Tables 4-6) shows that the drop in I.Q. is by no means a general deterioration or lack of growth. The children succeeded at well over half of all items except the verbal-abstract ones. In the verbal-abstract items, where skills at verbalization and abstraction were combined, only 14 percent of the attempts were successful.

When we examine the different types of tasks grouped under verbal-abstract and compare them to other tasks which did depend in large, although not major, part upon verbal comprehension (see Table 7) we find that the naming of isolated objects, whether in pictures or miniatures, was the most difficult of the tasks (excluding the culturally irrelevant tasks of the watch and egg-beater); only seven percent of the attempts were successful. The repetition of digits and sentences was somewhat easier, with 27 percent of attempts passed. In contrast to the above, where children had to respond to words in meaningful contexts whether by their own descriptions of a picture or by responding to the tester's verbalizations (identifying objects and pictures, following commands, or the comprehension of a story), they did relatively well, with well over half the attempts ending successfully.

It appears from the above that it was more the abstract isolated quality of the items than a lack of vocabulary which caused the poor abstract-verbal scores and consequent drop in I.Q. At older levels the Stanford-Binet is heavily loaded with these abstract items; village I.Q.'s remained low. While for the total test group there was a significant negative relationship between I.Q. and age (r = -.54), for the youngsters in school this was not so (r = .06). In neither the total nor the school-age group was I.Q. related to socio-economic status (r = .12, N = 71; r = .10, N = 27).

Moral Judgements (Table 8) *

Five of Piaget's sets of stories (25) were administered to 84 village youngsters. For each set of stories they were asked which protagonist was naughtier and why. The Piaget stories included:

a. broken glasses

b. spilled ink

c. misused scissors

d. stealing bread or a ribbon

e. stealing candy or freeing a friend's caged bird

---

* Some of the data presented in this section have been reported elsewhere (13).

A sixth set was added contrasting disobeying one's mother with stealing and betraying one's friends. The story read as follows:

> Carlito's mother told him to not play ball in the house for fear that he would break something. But he started playing. The third time that he threw the ball he missed his aim and broke a new vase that was on the table.
>
> One day Jorgito was speaking with Mr. Gomez. He told him that some of his friends had stolen some fruits from his orchard, knowing that he, Jorgito, had also stolen some.
>
> Which child was naughtier (tenía mas culpa)? Why?

Responses were scored in terms of a scale from one (strict moral realism such as the amount of damage or unquestioning obedience) to four (full reciprocity such as evaluation of motive above all other considerations); two and three were intermediary steps. In order to shorten the battery not all children were given all six sets of stories; final scores were the means of the items answered.

As would be anticipated from Piaget's work, the younger children's responses were based on moral realism and an authoritarian ethic. The mean for those under ten was 1.9 (SD = .97); for these youngsters the child who broke more glasses, spilled more ink, or made a bigger cut, was guiltier because the damage he created was costlier. Older children became more concerned with the circumstances surrounding the stories although they very rarely gave what Piaget has described as reciprocal responses. Instead they often felt that the victims were to blame for not taking sufficient care of their property or for failing to anticipate the protagonist's behavior; for example, a number of them stated that the storekeepers were guiltier than either child because they had allowed them the opportunity to steal. The older youngsters also felt that a child should be aware of his skills and not try to do something for which he lacks competence; this came out especially in the story of the spilled ink. A few youngsters indicated awareness of unconscious motivation, as did the one who stated that the girl who made a big cut in her new dress must have been very angry with her mother. In one respect, however, they were almost unanimously authoritarian; mothers, while they may err, should never be disobeyed. This latter matches quite closely the Mexican sanctification of the mother role; both it and their disapproval of venturing beyond known competencies show quite clearly relationships between cultural standards and reasoning. Thus we see that while Piaget's type of moral reciprocity, common in our industrial society, did not develop, a different type did, one in which there was a mature concern forthe protagonists and their behavior, although with differing standards of evaluation. For the 84 youngsters reciprocal moral reasoning was correlated with age (r = .49) but not with economic status (r = .03).

Judgements of Equivalence and Difference (Tables 9-11) *

To evaluate equivalence and difference judgements we followed the procedure developed by Olver and Hornsby (22), changing some of the items to things more familiar to the children. The array we used consisted of: banana (*platano*), orange (*naranja*), bean (*frijol*), meat (*carne*), milk (*leche*), water (*agua*), air (*aire*), fire (*lumbre*), stone (*piedra*). Each child was first asked how a banana and an orange were alike, how a bean differed from them, how it resembled them, how meat differed and then was like them, etc., until the list had been completed, except that in the case of the last item, stone, only difference was requested. In addition, the youngest children were asked, as each new item was introduced, if they knew what it was and to define it, ** which they readily did.

Children's responses were recorded verbatim and were scored for adequacy, level of abstraction, and type of attribute used; if two or more different attributes were used each was given credit. The attributes used were classified into the following categories:

1. Formal: abstract characteristics, often associated with superordinate grouping (i.e., fruits, foods, solids)
2. Moral or Affective: evaluative labels (i.e., good, bad, pretty, ugly)
3. Functional
    a. Intrinsic: what the item can do (i.e., bananas grow)
    b. Extrinsic: what can be done with the item (i.e., we eat bananas)
4. Perceptible
    a. Intrinsic: size, color, shape, texture, etc.
    b. Extrinsic: location in time or space

---

* Much of the material presented in this section has been reported previously (15, 16). The earlier analyses were based on 52 complete cognitive cases; an additional 11 cases which lack the questionnaire material have been added to the analyses discussed in this report.

**"¿Sabes lo que es un ______? ¿Qué es?"

5. Decree: Fiat definitions rather than reasoning (i.e., it is different because it is different, all these things are alike and this one is different)

Attributes, levels of abstraction, and adequacy of response were scored separately for differentiation and equivalence. Overall success at differentiation was considered as understandable differences in at least six out of the seven cases; success at equivalence meant adequate equivalence judgements for at least the foods, water, and air. Adequacy of equivalence followed the same criteria established by Olver and Hornsby for superordinate groupings, except that we also allowed those complexive groupings which were logical and not overly all-inclusive. Adequacy of differentiation was easier to establish; any attribute which distinguished the new item from the others, even if only by exclusion, was adequate (i.e., this is clear and none of the others are clear).

As a reliability check on the food list the children were given a second array: horse, cow, chicken, lion, snake, mosquito, man, tree, mountain. An analysis of attributes used showed no significant difference between the two lists. Neither was there any appreciable difference in the level of difficulty; for example, 51 percent succeeded at equivalence on the food list and 48 percent with the animals (Chi-square = .001, df = 2).

Few of the 63 children tested had difficulty in differentiating at any age (see Table 9). They used mainly perceptible criteria, so that it appeared as though they were examining the items in their minds and describing the differences they saw. However, few succeeded at the equivalence task (see Table 10), for perceptible attributes do not serve well for synthesis.

This does not imply that they were not able to formulate equivalencies, for they used them consistently as a basis for differentiation. Rather, they rejected the notion of equivalence as an end unto itself in much the same fashion that younger village children refused to supply abstract definitions but did show "normal" receptive vocabularies. When we compare their responses with those of North American or urban Mexican youngsters, we find that there is a sharp distinction between styles (see Table 11). All groups use perceptible attributes, but the villagers use little else to formulate similarities. A modal twelve year old * said that a banana, "an exquisite fruit," and an orange, "a juicy fruit that is sold a great deal in the market," were not at all alike; that meat was different from the items preceding it in the array because meat was "animal" and the others "vegetable"; and that milk was different because "it is liquid and the others solid." This youngster used formal and superordinate concepts with ease but rejected any formulation of equivalence per se because equivalence to

---

* The selection of modal types has previously been described (13).

her meant almost exact perceptible equality. What did matter, and where she had developed considerable skill, was the ability to perceive and differentiate with precision, a skill much needed by peasants whose adaptation depends upon their ability to "read" nature, their growing crops, and the money-lender. For them there is little need to develop skills in formulating equivalencies and other abstract tasks not directly related to normal activities, so they tend to ignore these challenges. In the urban world such skills are far more necessary while precise differentiation is not as important. Both the urban and the rural child develop those skills most necessary in their environments.

Attributions of Life and Causality (Tables 12 and 13)

A part of the questionnaire developed for this study explored children's conception of life. Some of Piaget's questions on life and causality (22,23) dealing with clouds, the moon, the sun, night and dreams, were repeated. As was true for Piaget, the older children in the village were better able to differentiate the living from the non-living ($r = .48$, $N = 74$); these results were not related significantly to socio-economic status, school achievement, moral judgements, or any of the I.Q.'s (all r's $<$ .2).

In addition to the above (and earlier in the questionnaire) the children were asked if each of 16 items had life and why. The list consisted of six manufactured items (chair, bell, bus, book, pistol and clock), five found in nature (sun, moon, stone, rain and wind), and five which had life (horse, mosquito, corn, rose, you). Responses were recorded verbatim and were scored for accuracy; in addition note was made of the rationale used for attributing or negating life.

As with Piaget's questions, children became more accurate in their attribution of life as they grew older. However, it appears that the two sets of questions, Piaget's and ours, tapped different aspects of the concept either because of their content or structure, for the correlations between successful attribution in the two sections barely passes the .05 level of significance ($r = .23$, $N = 74$).

The rationales for the attribution of life (or lack of it) were first classified according to the following criteria:

1. Formal: classificatory label (i.e., I am a person, it's an animal, we are all men, it isn't a person, it's a plant, a flower, a weapon, a vegetable, a planet)
2. Life cycle: birth, growth, reproduction (never mentioned). death (i.e., I was born, I grew, and later on I will die, it is planted and it grows, it doesn't get born)

Destructibility

  a. Intrinsic (i.e., it falls apart or doesn't, goes out of order, dries up, looses its leaves, ends)

  b. Extrinsic (i.e., it can or cannot be broken, put out of order, killed, ended)

4. Manufactured (i.e., made of metal, paper, wood, glass, many things; made in a factory)

5. Functional (same criteria as in equivalence and difference judgements)

  a. Intrinsic (i.e., it provides food)

  b. Extrinsic (i.e., it is used, it can be held, carried; it is for eating, working, reading, sitting, riding, planting, making tortillas, ringing, throwing; we germinate and plant it, fix it and fill it up, cook it, take it to church, eat it; one wants to write in it; children give it affection)

6. Antropomorphic

  a. Self-initiated activities (i.e., stands, sits, walks, breathes, eats, helps, kills, resists, thinks, sleeps, works, bites, sucks blood, hurts (others), defends us, flies, blows, calls, rains, dampens, warms, speaks, moves, falls; carries people, gives flowers, tells the time, sends out lightening, gives light; doesn't do anything, lets its drops fall)

  b. Desire for same

7. Perceptual (same criteria as in equivalence and difference judgements)

  a. Intrinsic: size, shape, texture, etc. (i.e., it's a light, a star, a mound of earth, a stick, water, air, dry, little; it has a heart, letters, pictures, blood, meat, rays, bullets)

  b. Extrinsic: position in time and space (i.e., it's in the sky, in the plant, with us; it comes from a mine)

8. Moral or Aesthetic (same criteria as in equivalence and difference judgements): evaluative labels (i.e., good, bad, ugly, pretty)

9. Magical

   a. Supernatural Forces (i.e., God gave, said, ordered; it has a soul; my mother (its mother) said)

   b. Decree (same criteria as in equivalence and difference judgements: because it is; it has life, it has to have; it's like us, like people; it's a horse, mosquito

10. Failure to respond: I don't know or no rationale given

As with the equivalence and difference judgements, when multiple criteria were used for a single item all were given credit.

Of the ten criteria, only formal and the use of the life cycle for living things showed any relationship to age (r = .27 and .26 respectively). Although each category could be used 16 times, four were used less than once and five less than twice, thus leaving only one, antropomorphic, to carry the bulk of the responses (see Table 12 for distributions). When the responses were correct this was an adequate category, for it included the ability or wish to act or the negation of same; however, it lacked the profundity of the life-cycle responses and was often used to attribute life to the non-living items on the list.

The ten criteria were then condensed into three categories: life-related, formal, and other (see Table 13 for distributions), and each child was given a new score for preferred criteria. To do this the three criteria were rated for "maturity," from "other" (1 point) to "formal" (5 points); even numbers were used to break ties. The final rating scale was as follows:

1. other
2.
3. life-related
4.
5. formal

The mean score was 2.4 (S.D. = 1.1); the "maturity" scores were not significantly related to age (r = .20).

Attributions of Worth: The Value of Money (Table 14) *

Two aspects of monetary value were tested, knowledge of relative

---

* The material presented in this section has been reported previously (15,16).

costs and time-money equivalences. For the former each child was asked which would cost more, a toy or a goat, a tractor or a sewing machine, a car or a horse. For the latter he was first asked how much Laura should charge for taking a week to embroider five doilies after spending 10 pesos on the materials, and then how much Martha should charge for spending two weeks on embroidering more difficult designs after also spending 10 pesos on materials. To receive credit for time-money equivalency he would have to subtract the cost of the materials and then double Martha's price, within some allowance for arithmetic error.

The two tasks did not measure the same variable (see Table 14). This is not surprising when we bear in mind that while the peasant may be as keenly aware as the city dweller of the relative costs of items, his economy is based upon how much land he controls, not how fast he tills it; his economic resources are limited quite clearly in his eyes and in the ever-present eyes of his neighbors; speeding up his labor brings no profit. *

Attributions of Worth: Goodness (Table 15)

What criteria are used to determine whether something is good or not?

Fifteen of the 16 items used for the Attributions-of-Life scale (omitting the last item, the reference to the child himself) were presented to the same 74 children, but this time they were asked if the item was good and why. They were scored both for a positive or negative response (two points for good, one for a mixed response, zero for bad) and for the rationale used. The following criteria emerged:

1. Aesthetic: seldom used, and then only to describe the last item (rose) positively (i.e., it's pretty; it's pretty in the garden, in the house; it smells pretty)
2. Formal: seldom used classificatory label (i.e., flower, plant, food, adornment, useful object)
3. Functional (same criteria as in equivalence - difference judgements and attributions of life)
    a. Intrinsic (i.e., it feeds, wets, heats, refreshes, carries, transports us; it gives us light, water; it blows on us, makes us sweat, takes us to town, teaches us to read; it helps a lot)

---

* For further amplification of this point see Foster (4).

b. Extrinsic (i.e., we use it to sit on, ride, travel on, carry the sick, go to the fields, make fences, know the hour, learn how to read, study in, make many things; we use it as a decoration; we smell it, eat it, commit crimes with it; they ring it at work, they ring it so one will go to school; you live on corn; it has many uses, it serves us)

4. Threat: physical danger or discomfort implied or negated (i.e., it does bad things, it doesn't do anything bad; it crushes, trips, hits, kicks, throws down, bites, eats, infects, burns, betrays, kills people; it suchs blood, blows down houses or trees; it can put a bullet in us, make us sick, give us malaria; you want to play with a pistol and then you kill someone; in former times the Spaniards used stones to frighten us)

5. Life processes: life-cycle and antropomorphic qualities, as in attributions of life (i.e., it sounds, blows, calls; it gives light, shade, flowers; it comes out at night; it picks up papers, brings cold from afar, shows the hours, waters the tender new corn, obeys when you call it; it gives water to everything, lights up the earth, warms all who live on the earth; it is born yellow, it is born full grown)

6. Perceptual: same criteria as in equivalence-difference judgements and attributions of life (i.e., it is heat, air, dust; it comes from afar; it stands or lies there; it is heavy, flowery)

7. Decree: same criteria as in equivalence-difference judgements and attributions of life (i.e., it is, it is not; it's a horse)

8. Failure to respond: I don't know or no rationale given.

As with the equivalence-difference judgements and the life-related questions, when multiple criteria were used for a single item all were given credit.

The children of all ages tended to see the items as primarily good. With a maximum score of 30, the mean score for goodness attributions was 22.69; this was not significantly correlated with age (r = .21). For the rationale on which these attributions were based, functional criteria were the most commonly employed, especially by the older children; they tended to supplant the life and threat criteria popular among the younger ones. The remaining five criteria were employed an average of less than once. The eight criteria were then condensed into four major categories: life-processes, function, threat, and other (see Table 15 for distributions and correlations).

Interrelations among the Cognitive and Cultural Variables (Tables 16-18)

Age was significantly correlated with the use of more mature criteria in most of the reasoning tests which were germane to village culture (see Table 16), but not to any of the other measures. This was true both for the I.Q. tests (the one exception was that babies scored high on the performance oriented Cattell but older children did poorly on the Stanford-Binet) and for the equivalency judgements; the cultural implications of the poor performance in this latter test are discussed in detail elsewhere (15).

Children showed little change in their criteria for attributing life and goodness across the years, perhaps because most had already adopted adult criteria by the age at which we began testing them.

There was a significantly negative correlation between school achievement and age (r = -.28, N = 63), which was to be expected in the light of national promotional policies.

We see from the above that in those tests which measured cognitive variables germane to village culture the youngsters in the sample tended to develop more mature styles of thinking during the later childhood years or appeared to already have learned adult criteria early in childhood; in those tests which measured cognitive variables foreigh to their culture the children tended to score poorly at all ages. The theory of intelligence of necessity outlined in Chapter I appears to have been substantiated by these data.

Of all the cognitive variables, only the amount of goodness was significantly correlated with socio-economic status (r = .23, N = 74), suggesting that the farther removed from an economy of bare subsistance the more benignly youngsters are able to view the world.

School achievement was correlated significantly with only two of the I.Q. tests, the Raven's (r = .47, N = 48) and the Stanford-Binet (r = .49, N = 26). This suggests that while the school rewarded learning styles not far removed from the principal ones tapped for informal education -- unquestioning obedience and keen observation of details in the environment -- it also rewarded abstract manipulations, the latter unnecessary for success in the peasant economy.

The Draw-A-Man and Raven's tests correlated positively with each other, probably because both tap keen observation of details. In addition, the former test correlated with maturity of criteria in both equivalence and difference judgements; all of these have in common a keen awareness of details in the environment (see Table 17).

Success at attributing life correctly was related both to maturity in moral judgements (r = .36, N = 56) and to ability to form moral equivalencies (r = .28, N = 74); both are low-order correlations but perhaps indicate greater awareness of some of the adult realities of peasants' lives. Maturity in moral judgements (abandonment of strict moral realism) was also related to the Stanford-Binet (r = .47, N = 26), perhaps due to the abstract nature of both tasks.

Maturity of criteria for attributing goodness was related both to maturity of criteria for attributing life (r = .24, N = 74) and to success on the Piaget scale (r = .33, N = 74).

Many of the correlations reported above, while significant, are low; we have reported them because we feel that they point toward directions for further study.

CHAPTER IV

THE CHARACTEROLOGICAL VARIABLES

In this chapter we shall first describe the character traits and personality scorings interpreted from the projective tests. The actual method is described in detail in the forthcoming larger study of the village. Second, we shall consider the personality measures as they relate to age and sex differences. Third, we shall describe character factors (syndromes of character) in their relationship to parent character as well as to socio-economic variables. Finally, we shall discuss the relationship between factors of character and children's cognitive styles.

Personality Measures

Thirteen personality measures were scored from the projective materials for each of 110 youngsters between the ages of 6 and 18 (see Table 19). Of these, the first four to be described below, we consider to be the nucleus of child character. We went on, however, to score other personality traits which are less profound and easier to score.

Mode of Assimilation

The mode of assimilation describes the way in which an individual relates himself to the world by acquiring and assimilating things. He can acquire and assimilate things by receiving them from the outside world or by producing them by his own effort, but he must acquire and assimilate them to satisfy his needs. We have scored, from the TAT and the Rorschach, whether or not each child showed a receptive, exploitative, hoarding, or marketing orientations, or any combination; all are detailed by Fromm (7).

Productivity

The mode of assimilation is modified by the child's level of productivity or interest-activity. For example, an unproductive and receptive child would be uninterested in anything but receiving from others, while a productive receptive child would show a receptiveness to others, optimism, and interest in the world around him. Similarly, an unproductive hoarding child might remain in a world of dead objects which he would guard closely in order to feel security while a productive hoarding child would be interested in useful order, cleanliness, and enlargement of his material possessions.

Productivity was scored from the stories and the Rorschach responses on a five point scale:

5. creative and original
4. interests and activity, but not original
3. productive indications mixed with passiveness and rejection
2. passive and inactive
1. no interests or rejection of stimuli

Social-Political Relations

Another central aspect of character is the mode of social interaction. To score social relations we used the projective stories and the responses to the Piaget moral judgement items. We included five categories, allowing for the possibility that a child might be scored for more than one category.

1. Irrational authoritarianism: this implies the infantile view of authority as all-powerful; it goes together with moral realism and a magical view of unassailable authority.
2. Traditional authoritarianism: the traditional authoritarian does not conceive of authority as having superhuman powers nor of might making right, but in a peasant society traditional authoritarianism does imply a realistic acceptance of the society's structuring of authority.
3. Democratic: a democratic child is one who defends his own rights for free action and believes that others' rights should also be respected.
4. Rebellious: a rebel provokes and attacks authority, often because he feels that it is really weak; for further discussion see Fromm (6).
5. Submissive: this implies a child who neither identifies himself with the authority nor rebels against it; rather he gives in.

Most of the children showed strong submissive traits along with other modes of social relating. In the village it would be difficult for a child to get along without submissive attitudes. The fact that some children lack this trait testifies to remarkable parents who do not demand submission.

Parental Fixations

The degree of fixation or deep dependence on the father and mother were also scored from the projective stories. It should be kept in mind that some degree of dependence on parents is normal in childhood. Yet many children showed intense dependence on the mother in contrast to little or no dependence on the father.

Other Personality Measures

Quality of Aggression

The quality of aggression was scored from the projective stories. The categories included:

1. Self affirmation: aggressiveness in defense of the self.
2. Archaic aggression: exploitative, sadistic, cannibalistic pleasure in aggressiveness.
3. Necrophilia: affinity to death and dead things, a cold destructiveness without lust or pleasure.
4. Little aggressiveness of any kind.

Hostilities

We also scored whether or not a child expressed hostility to particular figures from the stories. Besides the quality of aggressiveness we wished to note where the aggression was directed. The figures included:

1. the mother
2. the father
3. women in general
4. men in general
5. siblings

6. self-directed hostility

7. generalized hostility, directed to everybody

Fears

Stories told for the TAT often express a child's fears. We scored the presence or absence of the following fears, which were empirically found to be common in village children:

1. physical harm, being hurt
2. hunger, starvation
3. abandonment, being alone
4. being eaten
5. being ridiculed or mocked
6. loss of one's possessions, being robbed
7. loss of one's integrity, loss of one's dignity, betraying others
8. sex
9. the father
10. the mother

Besides scoring the type of fear we scored the intensity of the fears on a three-point scale: strong, moderate, little fearfulness.

Identifications

On the basis of the projective stories we determined whether the child identified with the father, the mother, both, or neither. The criterion was basically that of taking the side of a particular parent, of making that parent's battles one's own.

Strongest Parent

We also scored the child's view of which parent was stronger on the basis of the stories.

Sense of Reality

On the basis of the Rorschach as well as the stories it was possible to score whether the child was very accurate in his perceptions of reality, adequately accurate, or distorting.

View of Mother

We scored the child's view of his mother from the stories, as loving, conditionally loving, or rejecting. Conditionally loving means that the mother is loving only when the child obeys her and that love is withdrawn for disobedience.

Levels of Aspiration

Children were also asked what they would like to be as adults. Those who aspired to the professions were scored as high. Those who aspired to be teachers or office workers were scored as moderate. Factory workers and agricultural workers (peasants) were scored separately.

Wishes

The youngsters were also asked what they would like if they were given three wishes. The answers were coded as implying desires for:

1. wealth, material objects, or money
2. rebellion, the desire to be free of authority
3. aggressive desires, to be powerful, to have a gun
4. generalized happiness

Sex, Age, and Personality (Table 20)

Sex

It is striking to discover that there were few significant differences between the sexes. Among the adults we found the men significantly more receptive and less hoarding than the women (12), but although the girls were more hoarding than the boys (72 percent to

54 percent), they were also more receptive. However, the highest percentage of boys (59 percent) fell into the receptive category and the highest percentage of girls into the hoarding category.

The girls were more hostile and rebellious to the mother; this reflects mothers' harsher treatment of girls and greater indulgence of boys. The girls showed more hostility to men than did the boys, and a greater fear of sex; this is a direct reaction to the exploitative nature of sexual relations in the village culture (16).

Age

Mode of Assimilation

The children became somewhat more receptive and exploitative as they grew older, as well as more marketing. The greater receptiveness is true only for the girls and perhaps implies an adolescent female opening to the world which may be temporary, since there is less receptiveness in the older women. The increasing marketing characteristics imply that this is a mode which develops in older children; however, those with a marketing personality still formed a small minority in the peasant village.

Social-Political Relations and Aggressiveness

One would expect the children to become more democratic, rebellious, and self-affirmative as they grow older. But age is negatively correlated with self-affirmation; as they grow older and the culture bears down upon them more strongly the children become more and more submissive. There were no age trends evident for archaic or necrophilic destructiveness. It is interesting to note, however, that 80 percent of the children did express archaic-destructive impulses.

Hostilities and Fears

In general, both hostilities and fears increased with age. (The single exception was the fear of being eaten; younger children were commonly threatened in the village by stories of being eaten by animals and the fear may be a response to these threats.) Just as the child becomes more submissive, he also becomes more hostile and fearful. The general level of hostility tends to rise as a child becomes a more mature member of the society; he begins to see his neighbors with greater suspicion and distrust, which fits the account of peasants in Tzintzuntzan given by Foster (5) and Oscar Lewis of

Tepotzlán (12). Life in Mexican peasant society is one of general mistrust of neighbors; this is expressed in the generalized hostility of the TAT stories.

With greater hostility there is a correspondingly greater fear of what others may do to the individual. Age is correlated with fears of being ridiculed, being rejected (abandonment), of losing one's possessions, of sex.

A further finding is that the children becmae more afraid of their mothers as they grew older; most (65 percent) fear their mothers. Hostility to the mother was also more widespread than hostility to any other person or category, characterizing 65 percent of the children. If we put this together with the extreme fixation on the mother that also characterizes 70 percent of the children, we can postulate that deep dependence also produces fear and hostility. Children are very ambivalent toward the mothers who dominate their lives.

Identifications

The majority of the boys (59 percent) as well as most of the girls (75 percent) identify with the mother. This may be explained, in part, by the perception of the mother as the stronger parent, a perception that increases with age for both sexes. Younger children expressed doubt about which parent was stronger, but even the youngest children tended toward the side that wins, toward the parent with power. Boys with weak fathers sometimes expressed in their stories the wish to remain small, possibly because they did not want to grow up to be like their fathers, possibly because they wished to remain protected by the mother.

In contrast, however, there were children who showed a strong sense of self and who did not want to identify with anyone else, either mother or father. These were the most self-affirmative and democratic youngsters.

Wishes and Aspirations

The older children were more likely to have wishes concerning aggression, rebellion, or happiness. We feel that these wishes represent day-dreams and, as we shall see, those who did the wishing were in reality the least aggressive and most passive-receptive children.

As might be expected, work aspirations rose with age, as children learned at school of a life beyond the village confines.

Syndromes of Character

After the personality data were analyzed character factors were derived using McQuitty's method of elementary factor analysis (17). To do this a correlation matrix was computed for the items scored (see preceding section) and each item was grouped with the one other item in the matrix with which it had the highest correlation. Pairs were then grouped, then the larger groups, etc., until eight major groups, or factors, emerged; criterion for inclusion in a group was that the item had to be correlated higher with some other item in the group than with any other item in the matrix. This is a non-parametric type of factor analysis in which only positive relationships were used.

1. Receptive Character

This factor describes the combination of traits that characterize the receptive, passive child, whose main activity exists in a world of fantasy. The factor includes:

a. receptive mode of assimilation

b. little aggressiveness

c. wishes involving aggressiveness, rebellion, and the acquisition of material things

d. fear of losing what the child has

2. Authoritarian-Destructive Character

This factor describes both the traits of the authoritarian syndrome and its relationship to primitive ties to the mother. The factor includes:

a. authoritarian belief in power as right

b. malignant destructiveness, an affinity to death, destruction and dead things

c. generalized hostility to everyone and life

d. unlimited aspiration for prestige and power

e. intense fear of starvation

f. intense fixation on the mother

g. feeling that the mother is stronger than the father

3. Exploitative-Rebellious Character (Lone Wolf)

This factor or syndrome presents a different kind of hostility, less malignant than the authoritarian-destructive character. While the latter remains in bondage to primitive, incestuous ties, the exploitative rebel is a lone wolf who tries to break his ties to his mother, but in doing so tries to get what he can from others. Such children are characterized by the following traits:

a. exploitative mode of assimilation

b. archaic aggressiveness, cannibalistic wish to swallow others

c. rebelliousness to authority

d. rebelliousness to the mother

e. intense fearfulness

f. fear of the mother

g. hostility to the mother

h. fear of physical damage (in boys, castration anxiety)

4. Submissive-Marketing Character

The marketing character makes himself a package to be bought on the market. Among children in the village this mode is combined with submissiveness and with an underlying hostility. In making himself into an attractive package, ingratiating himself, such a child feels hostile to grown-ups and at the same time appears to sense the threat to his own integrity. The following traits characterize the syndrome:

a. marketing mode of assimilation

b. submissiveness

c. hostility to men

d. hostility to women

e. fear of loss of integrity

f. fear of sex

5. Rejection of the Father

The fifth factor includes a number of traits indicating rejection of the father, fear of him, and hostility toward him. Along with these variables is identification with the mother. The combination of distance from and fear of the father along with mother identification is accompanied by the fear of ridicule and self-denigration. This combination is understandable in boys who, in rejecting the father and identifying with the mother, would feel particularly vulnerable to being ridiculed as sissies, and who might feel self-hatred for betraying their own sex. The factor includes:

a. fear of ridicule

b. identification with the mother

c. fear of the father

d. hostility to the father

e. rebellion against the father

f. hostility directed toward the self (self-denigration)

g. wish for happiness

6. The Infantile Factor

The sixth factor has been called a childish factor because it characterizes the younger children (aged six) and because it appears to be a combination of developmental traits and reactions to the cultural variables of that age. It includes three elements. The first, extreme moral realism on the Piaget items is characteristic of this age group. The second, fear of being eaten, is probably a reaction to threats commonly made to children of this age that "the cat" or "crocodile" will eat him if he does not behave. The third element, sibling hostility, may be strongest at this age when the village child is dominated by older siblings, yet denied the attention given to younger children. The factor includes:

a. moral realism

b. fear of being eaten

c. hostility to siblings

7. Democratic-Affirmative Character

The seventh and eighth factors represent healthy, progressive forces in the child. The seventh represents non-destructive affirmation combined with realism and respect for the rights of others. It includes:

a. the democratic mode of relating

b. self-affirmation

c. realism

8. Productive-Hoarding Character

Studies of the adults in the village have shown that the productive-hoarding character is the one best suited for adaptation to peasant life. This character syndrome appears in childhood and is related to feelings of having a loving mother and of having a tie to the father. The factor can be contrasted to those unproductive factors in which the father is rejected and there is exclusive dependence on the mother. The factor includes:

a. productiveness

b. the hoarding mode of assimilation

c. the mother felt as loving

d. father fixation

Intercorrelations among the Factors (Table 21)

Essentially, the unproductive factors (1 through 5) are significantly correlated among themselves, while the productive factors (7 and 8) correlate significantly with one another. Factors 5 and 8 are significantly correlated among the girls ($r = .39$, $N = 64$) but not among the boys; this would suggest that those girls who accept the father do so only with ambivalence.

The Factors Related to Sex and Age (Table 22)

None of the factors showed any relationship to sex; this surprised us only in the case of Factor 5, which appeared to us to characterize boys more than girls.

Factors 1 through 5, the unproductive factors, correlated with age, indicating that the children become more unproductive as they grow older. This fits our observations. In the younger children it is difficult to score (or observe) clear-cut character syndromes. Rather, the six year old shows potentialities for many character syndromes while none has crystalized. The unproductive factors do not appear as regressions to an earlier stage, but rather as crystalizations of unproductive potentialities at a time when the child's creative impulses have been crushed or worn down by his life experiences.

In this context, it is noteworthy that Factor 7, the Democratic-Autoaffirmative Factor, is correlated negatively with age, indicating that the younger children have a stronger sense of self, more feeling for others, and, in effect, are less beaten down. It is also worth noting that while in formal terms older children are more reciprocal on Piaget's moral judgement items, their democratic-autoaffirmative sentiments, in contrast to their formal-logical operations, diminish with age as they accept the traditional authority of the culture.

The Factors Related to Economic Status

The only factor correlated significantly with the family's material wealth is Factor 8, the Productive-Hoarding Factor ($r = .26$, $N = 110$). This suggests that relative abundance in the home favors the development of the most adaptive character type, that of the person who is active and productive but with the hoarding traits that characterize the successful peasant. On the other hand, there is no systematic relationship between relative poverty and any particular unproductive orientation, nor is the Democratic-Autoaffirmative Factor (Factor 7) associated with the material wealth of the family.

The Child Factors and the Character of the Parents (Tables 23 and 24)

While relative abundance helps to explain the background necessary for the development of the most adaptive type of peasant character, it is possible that further light may be shed on the other factors by relating them to the character of the parents. It is possible that the characters of the parents influence the development of child character through the socialization process.

Before discussing these relationships it is necessary to describe the parent factors since they differ from the child factors (see the adult report for a full description of the factors and how they were derived). The six parental factors include:

Factor 1. Cultural Adjustment. Individuals high on this factor tend to be older, more settled, more responsible with their children, less tied to their own parents. Those low on it tend to be immature, self-preoccupied, indifferent to others, and still emotionally dependent upon their parents.

Factor 2. Productivity. Individuals high on this factor are productive and loving. Those low on it are passive, unproductive, and tend to be more dependent and destructive.

Factor 3. Authoritarian-Submissive. Those high on the factor are authoritarian, sadistic, and exploitative. Those low on it are submissive.

Factor 4. Hoarding-Receptive. This factor represents the dimension of hoarding versus receptive modes of assimilation.

Factor 5. Social Role. At one end of the factor are those traits which characterize the feminine social role, including maternal love, submissiveness, and passive rebellion. At the other end are the masculine traits, especially narcissistic indifference and traditional authority.

Factor 6. Mother-Father Fixations. This factor indicates on the one hand intense dependence on the mother coupled with rejection of the father; and on the other hand attachment to the father, which we have never found to be as intense or regressive as the extreme mother fixation.

How do the parental factors relate to the child factors? In general the mother's character proved to be important in the development of the unproductive character syndromes. Leaving out Child Factor 6 because it is more developmental than characterological, the first five child factors, all unproductive, are correlated with the mother's own strong mother fixation (Mother Factor 6). All the unproductive child factors imply a lack of independence and an underlying strong fixation on the mother. They also imply a rejection of the father, in contrast to Child Factor 7, and, even more strongly, to Child Factor 8. These findings suggest that the mother who remains tied to her mother is more likely to make her own children dependent upon her, to reject male authority, and to communicate this rejection to her children. The findings also suggest that a positive emotional tie to the father is usually crucially important in the development of a productive child and that this is a function of both the father's economic success and the character of both of the parents.

Child Factor 7, the Democratic-Autoaffirmative Factor, is correlated both to the father's degree of productivity (Father Factor 2) and to the mother's maturity (Mother Factor 1). As indicated, this child factor is unrelated to the material wealth of the family, but it is related to the father's loving interest and to the mother's responsibility, independence, and maturity.

Child Factor 8 is significantly correlated with having a mother who is loving and productive (Mother Factor 2) and a father who is hoarding (Father Factor 4). These correlations are higher for boys than for girls. Boys with loving mothers identify with the father and develop the hoarding mode of assimilation through him. A father who is hoarding and economically successful tends to produce sons in his own image, with the character traits best suited to success in the society. This process also depends on the mother's interest and love; loving mothers do not undermine their sons' relationships to male authorities.

In the few cases of boys with productive characters who come from fatherless families, we found that the productivity of the mother was the key variable for stimulating her son; the presence of the father was not absolutely necessary for healthy development. In a household with a father, however, a son's rejection or betrayal of his father generally led to unproductive character formation.

Of the unproductive child character syndromes, Factor 1 appears to be the most benign in the sense that the children are less aggressive, more passive, and receptive; Factors 2 through 5 are characterized by more destructive, exploitative, and self-betraying elements. Child Factor 1, like the other unproductive factors, is significantly correlated with the mother's fixation on her own mother. However, unlike the other unproductive factors it was also correlated with the father's maturity and responsibility and the mother's immaturity and irresponsibility (Adult Factor 1). One interpretation of this is that the receptive character feels the security of having a responsible father as cushioning. This child factor is not associated with intense fixation on the mother, nor with deep hostility, possibly due to the alleviating effect of a responsible father.

Character and the Cognitive Variables (Tables 25 and 26)

How do the factors of child character relate to modes of intellectual activity in the village? The most clear-cut and interesting finding is that Factor 8, the Hoarding-Productive (Adaptational) Factor, is correlated with intellectual achievement and adaptation. Children scoring high on Factor 8 tend to do best in school and to score the highest on Raven's Matrices, the I.Q. test we felt best for testing the observational, perceptual type of intelligence so useful for the villager.

There was also some evidence that children who scored high on Factor 8 tended to have the best mastery over strategies for pleasing, equally important in village life. One of the tests we used consisted of four sheets of paper, on the left hand side of each a drawing (a leaf, flower, fish, or duck). Each child was told

"This is a leaf (flower, fish, duck). Now you draw a leaf (flower, fish duck)." The drawings were scored in the following manner:

1. Creative. An individualistic drawing, not copying or distorting the original
2. Rebellious. Scribbling, show of anger at the task, refusal to draw at all
3. Submissive. Close, slavish copying of the drawing, including typographical errors.
4. Mercantilistic. Copying of the original, but with slight changes, such as coloring or background.

Our rationale for this last category was that slight changes correspond to slight differences in packaging such as one finds in the modern supermarket; the evidence suggests that our thinking was incorrect. The village children have virtually no experience with supermarkets and the significance of packaging. Those youngsters who made slight changes were probably motivated by a desire to please authority without showing abject submission. Their drawings were symbolic of the peasant's skill at ingratiating himself by subtle flattery. The children high on Factor 8 were the most likely to produce such drawings, which we now label "drawings to please."

None of the factors were significantly correlated with slavish copying. The factor with the highest correlation to copying was Factor 2, which includes intense mother fixation and destructiveness.

The children with marketing orientations seemed best able to figure out what type of drawing would be most attractive to us rather than to the usual rural patron. They were the ones most likely to produce "creative" drawings despite their submissive character traits.

We expected that Factor 7, the Democratic-Autoaffirmative Factor, would be positively correlated with creative drawings and negatively correlated with submissive ones. The correlations are in the right direction but do not reach a level of significance.

Factor 7 shows the highest and only significant correlation to the Draw-A-Man test, but this may be due to the fact that children scoring high on Factor 7 were on the average younger than the others (the Draw-A-Man was negatively correlated with age).

The child most likely to develop the intelligence which best fits the demands of peasant society was the child who was productive and hoarding. As we have shown, this was a child who came from a relatively prosperous family where the role of the father was positive and where the mother was loving; she did not undermine the father's position in the family. These findings are consistent with studies of American Negro families summarized by Moynihan (20), which imply that the presence of a productive, economically successful father is crucial for healthy development in the children, both for personality and for the ability to learn the skills of the culture. Even within a society such as that of Las Cuevas, where there is no caste discrimination, the same proved to be true. We found that the children best adapted to the culture were the ones most likely to develop "intelligence of necessity" (in this case perceptual discrimination and strategies for pleasing). With this intelligence well developed they were not only in a better position to achieve economic success, but also success in a school system which rewarded both fine discrimination and flattery of the teacher.

The Democratic-Autoaffirmative Factor which, from a human point of view, indicates mental health, did not prove to be adaptive to the culture of the village. Indeed, it would be interesting to discover what has happened to the children who did not lose their self-affirmation as they grew older. Did they leave the village, or are they planning to do so? Do they feel at odds with their culture?

The Cognitive Variables and Parental Character (Tables 27 and 28)

Finally, it is possible that some of the cognitive factors may be related to parental character traits which act directly to stimulate or inhibit the child. Here it is difficult to distinguish between parental stimulation of intellectual functioning and parental effects on the character development of the child.

For example, success on the Raven's is related to the mother's productivity and hoarding traits as well as to the father's lack of mother fixation (dependence). Since we have postulated that the Raven's is the test which best measures peasant intelligence, these correlations again indicate the importance of a loving, productive mother and an independent, successful father. Scores on the Raven's were also significantly correlated with the father's economic standing.

In contrast, intelligence as measured by the Stanford-Binet was negatively correlated with the mother's authoritarianism, suggesting that her authoritarianism may be even more limiting on the development of abstract-operational intelligence than the pressures of the society as a whole. There is some evidence that the development of abstract-synthesizing intelligence was also a function of the father's productivity.

His productivity was also correlated with children's success at equivalence judgements. Here the relationship between father's character and intellectual functioning is direct, unmediated by child character variables.

The father's productivity, then, appears to be a critical variable in the development of abstract-synthesizing reasoning. This implies that a child of a particularly loving and productive father is more likely to develop the intellectual skills which will allow him to go beyond the peasant culture. In terms of adaptation to the culture, the mother's role is also crucial.

CHAPTER V

CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

Conclusions

Cognitive Development

We found that the children of Las Cuevas did tend to develop those intellectual abilities which are most functional in their society; the hypothesis of the "intelligence of necessity," discussed in Chapter I, was substantiated.

We found large within-group variances, common to studies such as this one, due to the universally great variability among human beings. However, the following cognitive variables, which form a part of the village's intelligence of necessity, were commonly developed by the children:

1. attention to details and to the perceptual and functional attributes of items
2. interest and skill in fine differentiation
3. development of formal operations among older children, but always with a preference for concrete perceptual or functional attributes rather than abstract formulations
4. rejection of equivalencies and isolated-abstract tasks, for doing violence to reality

This last points up a major and crucial difference between the intelligences of necessity developed in the village and in urban-industrialized societies.

A few children in the village did develop the types of intelligence necessary for success in urban-industrialized societies. These children were generally from families with greater urban contacts; some had siblings who had studied in Mexico City.

We also found that youngsters from economically better-off environments tended to see the world more benignly.

In regard to language, and despite beliefs currently popular in the United States, we found that the differences in the dialects spoken by the village children and chilren from the industrial sector of Mexico City did not play a crucial role in determining differences in cognitive style. Rather, the village children tended to shape their use of words to reflect their thinking; differences in language generally reflected rather than created differences in cognitive style.

Personality Development

The following eight personality factors, or syndromes of character, emerged from the data, of which the first five were unproductive or regressive factors, the sixth an immature factor characteristic of the youngest children, and the last two productive or progressive factors:

1. receptive
2. authoritarian-destructive
3. exploitative-rebellious (lone wolf)
4. submissive-marketing
5. rejection of father
6. infantile
7. hoarding-productive
8. democratic-autoaffirmative

Of the last two factors, the progressive ones, we found that the development of the hoarding-productive syndrome was most important for successful adjustment to peasant society. Children high on this factor tended to come from families in which the father himself was a model of successful adjustment to the village economy, a man who had been able to maintain his family at above a mere subsistence level and who himself had a hoarding character. These children also tended to have productive mothers whom they saw as loving. In the cases of productive-hoarding children from fatherless families, the mothers tended to be loving women who did not undercut men.

The development of a democratic-autoaffirmative character is progressive in terms of human development, but not functional in the village. We found self-affirmation characteristic of younger children ; older ones must submit more and more to the pressures of parents, teachers, and other authority figures. Self-affirmative children tended to come from families with mature and responsible mothers and productive fathers.

It must be reemphasized that all of the above are based on low-order correlations; clinically we saw cases that were different, suggesting constitutional factors or the strong effects of mothers who were themselves strongly self-affirmative.

Implications and Recommendations

Personality Development

Mexican-Americans are the second largest non-white poverty group in the United States. Among the Mexicans we studied we found that, in contrast to the dominant culture in this country, relations between men and women follow differently rooted patterns. For the most productive personality development children need a loving mother who does not undercut men. The presence of a successful male image (father) is also important, although not essential; children with a loving mother may be better off with no father than with a destructive one.

All school personnel who have contact with Mexican-American families, especially family workers, should be aware of the cultural differences described previously in this report. They should work to bolster men both by building their roles and by making women aware of the subtle ways in which they may undermine men and their own children's development.

Cognitive Development

Mexican peasant children reject formulating equivalencies and performing isolated-abstract mental manipulations. They do pay much attention to details, come to understand people readily, and develop strategies for pleasing. Teachers and other school personnel should become more aware of these children's perceptions, expectations, values, and patterns of reasoning if they are to communicate adequately with them. They should also concentrate on developing the cognitive skills necessary for success in an urban-industrialized environment, apart from, and if a choice need be made, in preference to developing fluency in Standard-American speech forms.

It should always be borne in mind that when school and home cultures clash, those youngsters who do well in school, as most of our schools are currently operated, may be the submissive or exploitative ones, while the more productive children who are well adjusted to their culture may reject the school's culture and perform poorly.

Further Research

Major differences were found between the cognitive styles of Mexican peasant and urban-industrialized children. These were due not so much to differences in educational opportunities, as has often been charged for our own lower-class rural children, as to the cultural and environmental differences between the two groups. These cultural and environmental differences tended to shape perceptions, expectations, personality traits, cognitive styles, and values.

We suggest that replications of this study be funded and conducted in other regions, both in an attempt to determine where culturally influenced differences in cognitive style underlie poor academic performance and little success in the urban-industrialized world, and to shed light on the question of whether or not economic structures outweigh national traditions as shapers of culture, personality, and cognitive style.

Within the United States we suggest replications in rural (including migrant) and urban slum settings, with several of our major ethnic poverty groups (for example, Appalachians, Negroes, Mexicans, Puerto Ricans, and Indian groups). We also suggest replications in other nations, both urban-industrialized and developing, with peoples of many different economies.

CHAPTER VI

SUMMARY

Introduction

A major problem in education today is that of adapting curricula to utilize the cognitive strengths and meet the cognitive needs of our minority children. Yet general ignorance far outweighs knowledge about them.

Observation of different societies gives rise to the assumption that the socio-economic structure of each society supports the development of particular types of intellectual abilities and renders others useless or disfunctional. Tests which best measure the types of intelligence needed for success in urban-industrialized societies measure vocabulary, acquisition of information, abstract manipulations of data, and the subject's willingness to allow himself to be compared to others in terms of abstract scales based upon questions devoid of intrinsic meaning.

In peasant societies, on the other hand, the "intelligence of necessity" demanded by the society consists primarily of fine perceptual discrimination and strategies for pleasing and gaining favor from persons of authority and power. Accurate sighting and interpretation of natural signs is essential to agricultural people, but absolute truths are less important than the good will and assistance of those with power. Abstract manipulations of unrelated data are virtually useless, but finely manipulated rhetoric may move hearts.

Our dominant society in the United States is one in which creativity may be used to increase production and efficiency. Peasant society has few avenues for self-expression; a creative person may threaten the equilibrium and the distribution of the limited goods of an entire community. The community rarely tolerates a creative person with a strong spirit of play and self-expression who can transcend the general fear of individuality.

Procedures

This study of the cognitive and personality development of peasant children was conducted in Las Cuevas (a fictive name), a small village located approximately 65 miles south of Mexico City.

A sample of 168 youngsters from 70 families was selected for testing in areas of personality and cognitive development. The children ranged in age from six months to 18 years. Efforts were made to have it be a random sample but this was never fully achieved, nor were all the subjects given all the tests.

A basic battery of tests was developed for the children aged 6 to 12 and another for the adolescents. Common to both were the TAT and questions calling for moral judgements. For some of the youngest children in this group the TAT was supplemented by the CAT. In addition, each child in the entire sample was given a socio-economic rating reflecting his family's level of material wealth.

The children's battery also included a test of equivalence and difference judgements, Raven's Matrices, and a questionnaire covering the areas of affective reasoning, attributions of life and causality, monetary equivalencies, human motivation, games, and attitudes toward play. The seven and ten year olds were also given the Stanford-Binet.

The adolescent battery, in addition to the TAT and moral judgements questions, included the Rorschach, drawings to test for originality, and, for a sub-sample, the children's questionnaire.

Achievement and Draw-a-Man scores were obtained for all children enrolled in the village school. Data obtained from testing was augmented by participant observation on the part of team members.

Setting of the Study

Las Cuevas is a pretty, semi-tropical village in the heart of a fertile, irrigated, sugar cane and rice producing region. It has been a mestizo community since the time of the Spanish conquest, when a sugar mill hacienda was built. The Revolution of 1910-1917 caused major upheavals in the area; the village which formed when peace was restored was composed primarily of newcomers.

A traditional authoritarian and patriarchal family structure is idealized, although women often play the dominant role. Infants, especially the first few, are cherished and treated with much indulgence and patience. As they grow children are expected increasingly to be seen but not heard, to obey unquestioningly, and to observe keenly. From about the age of six or seven they begin to help with the lighter chores and, as they show themselves able, take on heavier tasks; boys are more indulged than girls, for whom the responsibilities are greater. There is a rather clear division of labor between the sexes and parents appreciate the growing ability of their children to help them, although they scold and hit for inadequate performance but rarely praise or reward. Most learning is by observation and imitation; in the school this is augmented primarily by rote mrmorization.

Marriage, usually consensual, generally takes place within a few years after puberty, often shortly after youngsters have dropped out of school. Once married, they are considered adults.

The Cognitive Variables

School Achievement

School achievement scores were derived from end of year scores for 142 children by means of the formula

$$\text{Achievement} = \frac{\text{(Final grade) (Mean age for class)}}{\text{(Child's age)}}$$

For the 63 children in the sample the mean was 6.9 (the theoretical range was 1 - 10, with 6 the minimum score for promotion to the next grade). Achievement scores were related negatively to age ($r = -.28$), but not to socio-economic status.

Draw-a-Man Test

This test (9,10) was administered to 107 children enrolled in the village school, and scored against the Puerto Rican norms. The results were skewed negatively, with the mean falling in the second quartile. When some of the children were given practice in drawing people their scores improved significantly ($t = 4.46$, $N = 75$, $p < .001$), thus throwing the validity of all the obtained I.Q.'s into question.

Raven's Progressive Matrices

Raven's Matrices (26) are another test of non-verbal reasoning. Again, even with lenient scoring, the 68 children tested tended to do poorly, although not significantly so (Chi-square = 4.70, $df = 2$). There was a slight positive relationship between this I.Q. and socio-economic status ($r = .29$), but none with age.

Stanford-Binet

The Stanford-Binet (29) and/or the Cattell Infant Intelligence

Scale (2) was administered to a total of 71 children aged 6 months to 10 years. The group under the age of two scored considerably higher than the normative sample, with none below normal and 40 percent above 110. Between the ages of 2 and 4, I.Q.'s dropped sharply, and over the age of four none were above 110 while 89 percent scored below 90.

An analysis of the items passed and failed by the 15 2 to 4 year olds shows that it was primarily in the area of verbal-abstract reasoning that the children did poorly; the same was not true for the other, more concrete, items heavily dependent upon language. While for the total group of 71 I.Q. was negatively related to age ($r = -.54$), it was not related to socio-economic status.

Moral Judgements

Five of Piaget's stories (25) augmented by one we developed to contrast stealing and betraying one's friends to disobedience of the mother, were administered to 84 youngsters in the child and adolescent samples. Children under 10 relied primarily on moral realism and an authoritarian ethic. Older children became more concerned with the circumstances surrounding the naughty behavior, although they rarely gave classically reciprocal answers. Rather they tended to feel that the victims were to blame for their own lack of care, and a few indicated awareness of unconscious motivation. They were almost unanimous, however, in their sanctification of the mother; disobeying her was worse than any other alternative. For the 84 youngsters approaches to reciprocity were correlated with age ($r = .49$) but not with socio-economic status.

Judgements of Equivalence and Difference

Using the procedure developed by Olver and Hornsby (20), but substituting for some of the items things common in the village, we found that the children had little difficulty in differentiating but rejected the structuring of equivalencies for doing violence to their sense of reality. They relied primarily on perceptual criteria, which served well for differentiating but interfered with equivalencies. However, they showed themselves fully capable of drawing equivalencies, which they used freely and well in the service of differentiating but refused to use as ends unto themselves.

Attributions of Life and Causality

In response to Piaget's questions on life and causality (21,22), older children were better able to discriminate between the living and inanimate than were the younger ($r_{age} = .48$, $N = 74$); these results were not related significantly to socio-economic status, school achievement, moral judgements, or any of the I.Q.'s (all r's $<$ .2).

In addition, the children were asked if each of 16 items had life and why; the list included six manufactured items, five inanimate ones found in nature, and five which had life. The children became more accurate in their attributions of life as they grew older; however, their responses on this section were only slightly related to their responses on the Piaget causality items ($r = .23$, $N = 74$). Most responses, whether correct or not, used antropomorphic qualities as criteria for attributing or negating life. Again, they showed careful observation of the environment, but generally lacked the profundity which the use of life cycle criteria would imply.

Attributions of Worth: The Value of Money

Two questions were asked, one dealing with the relative cost of items and the other relating time to money. All but seven percent of the children got at least one answer correct, but their attitudes toward the two questions differed. While peasants are well aware of the relative costs of items, time does not bear any monetary value in their culture; in their economy of limited resources speeding up labor brings no profit.

Attributions of Worth: Goodness

The same basic list of items used to elicit criteria for attributing life was used to elicit criteria for attributing goodness. Functional criteria were most commonly employed, especially by the older children, while 28 percent used the life ethic as a criterion and 22 percent used threat or its absence; the latter two criteria were more common among the younger children. The children from economically better-off homes tended to see the world more benignly than the others.

The Characterological Variables

Personality Measures

Thirteen personality measures were scored from the projective materials for each of 110 youngsters aged 6 to 18. Of these, we consider mode of assimilation, productivity, social-political relations, and parental fixations as the nucleus of child character.

Sex and Age Related to Personality

There were few significant differences in character between the sexes. Girls tended to be both more hoarding and more receptive than boys. However, the highest percentage of boys fell into the receptive category and the highest percentage of girls into the hoarding. The children tended to become somewhat more receptive, exploitative, and marketing as they grew older. This greater receptiveness, true only for the older girls but not for the older boys, may represent an adolescent opening to the world, for it was not found among the women. As they grew children also became more submissive and 80 percent of all the youngsters expressed some archaic-destructive impulses. Both hostilities and fears tended to increase with age, as children approached the cultural norm of suspicion and distrust common to peasants. Hostility to the mother was more common than any other type of hostility, 65 percent expressed fear of her, and 70 percent expressed intense mother fixation. The majority of boys (59 percent) as well as girls (75 percent) identified with their mothers and most (66 percent) saw her as the stronger parent.

The older children were more likely to have fantasies of aggression, rebellion or happiness. Levels of aspiration also rose with age as knowledge of the outside world increased.

Syndromes of Character

McQuitty's method of elementary factor analysis (17) was used to obtain character syndromes; eight were developed. Of these, five were unproductive or regressive (receptive, authoritarian-destructive, exploitative (lone wolf), submissive-marketing, and rejection of the father). One was infantile. Two were productive or progressive (democratic-autoaffirmative and productive-hoarding). The unproductive factors were correlated among themselves, while the productive ones correlated with one another. Rejection of the father and productive-hoarding syndromes were correlated for the girls but not the boys.

For the younger children character syndromes were not clear-cut, but crystalized with age. The unproductive factors did not appear as regressions to less mature levels, but as crystalizations of unproductive potentialities which clarified as the children's creative impulses were crushed or worn away by life's and society's pressures. While, in formal terms, the older children were more reciprocal on Piaget's moral judgement items, their democratic-autoaffirmative sentiments diminished and they came to accept the traditional authoritarianism of their culture.

Of all the character syndromes, only the productive-hoarding was correlated with socio-economic status.

The Child Factors and the Character of the Parents

The five unproductive character syndromes were all correlated with the mother's strong fixation on her own mother. She was also more likely to make her children dependent upon her; she was generally rejecting of male authority and communicated this rejection to her own children.

The democratic-autoaffirmative factor was related both to the father's degree of productivity and to the mother's adjustment, but not to the material wealth of the family. The productive-hoarding syndrome was related both to having a hoarding father and a mother who was productive and seen as loving, one who did not undermine male authority.

Character and the Cognitive Variables

Hoarding-productive characteristics were related to adaptation and intellectual achievement, as well as to the development of strategies for pleasing. The child high on this factor was the one most likely to develop the types of intelligence best suited to the demands of a peasant society.

Democratic-autoaffirmative characteristics were not adaptive within village culture. We hope to discover what has happened to the children who scored high on this factor.

The Cognitive Variables and Parent Character

The father's productivity appears to be highly important for the development of abstract-synthesizing reasoning. The child of a particularly loving and productive father is also more likely to develop the skills which will allow him to go beyond the peasant culture.

There were indications that the mother's heightened authoritarianism may have been even more limiting upon the development of abstract-operational intelligence than the pressures of the society as a whole.

Conclusions, Implications, and Recommendations

Village children did tend to develop those intellectual skills most functional for their society, namely attention to details, to the perceptual and the functional, skill in differentiation, and strategies for pleasing people. Only a few children in the village developed the types or intelligence necessary for success in an urban environment. Language differences did not determine differences in styles of reasoning, but at times reflected it.

The development of a productive-hoarding character was important for successful functioning within the peasant society, but the development of democratic-autoaffirmative traits were disfunctional and tended to disappear with age.

In the United States school personnel having contact with Mexican-American families should be aware of the cultural differences described above. They should work to bolster men in their roles and help mothers to do so as well. Teachers should work with their students toward developing those skills necessary for success in urban-industrialized economies while at the same time capitalizing on the intellectual skills they bring to school; they should concentrate on these intellectual areas in preference to developing fluency with standard American speech patterns.

When home and school cultures clash, the most productive children, who are also best adjusted to their cultures, may be the ones who most strongly reject the culture of the schools.

We suggest that replications of this study be conducted in other regions, both to determine where culturally influenced differences in cognitive style underly poor academic performance and little success in an urban-industrialized world, and to shed light on the question of whether or not economic structures outweigh national traditions as shapers of culture, personality, and cognitive styles.

REFERENCES

1. Bellack, Leopold and S. S. *Children's Apperception Test*. New York: C. P. S. Co. 1949.

2. Cattell, Psyche. *The Measurement of Intelligence of Infants and Young Children*. New York: Psychological Corp. 1960.

3. Flores, Ana Maria and others. *Fundamento Estadístico del Plan de Once Años de Educación Primaria*. México, D. F.: Secretaría de Industria y Comercio, Departamento de Maestreo. 1961.

4. Foster, George M. *Traditional Cultures: and the Impact of Technological Change*. New York: Harper and Row. 1962.

5. Foster, George M. *Tzintzuntzan*. Boston: Little, Brown and Co. 1967.

6. Fromm, Erich. *Escape from Freedom*. New York: Holt, Rinehart and Winston. 1941.

7. Fromm, Erich. *Man for Himself*. New York: Holt, Rinehart and Winston. 1947.

8. Fromm, Erich. *The Sane Society*. London: Routledge and Kegan Paul, Ltd. 1956.

9. Goodenough, Florence. *Prueba de Inteligencia Goodenough*. San Juan, Puerto Rico: Editorial del Departamento de Instrucción Pública. 1953.

10. Harris, Dale B. *Children's Drawings as Measures of Intellectual Maturity*. New York: Harcourt, Brace and World. 1963.

11. Huizinga, Johan. *Homo Ludens*. Boston: Beacon Press. 1955.

12. Lewis, Oscar. *Life in a Mexican Village: Tepotzlan Restudied*. Urbana: University of Illinois Press.

13. Maccoby, Michael. *The NYDO Test*. Mimeographed paper. 1958.

14. Maccoby, Michael. "La Guerra entre los Sexos en una Comunedad Campesina," *Revista de Psicoanálysis, Psiquiatría, y Psicología* (Mexico). II, 1966. p. 38-65.

15. Maccoby, Michael and Modiano, Nancy. "Cognitive Style and Industrialization in Mexico," Human Development. In press.

16. Maccoby, Michael, Modiano, Nancy, and Lander, Patricia. "Games and Social Character in a Mexican Village," Psychiatry. XXVI, 1964. p. 150-162.

17. McQuitty, Louis. "Elementary Factor Analysis," Psychological Reports. IX, 1961. p. 71-78.

18. Modiano, Nancy. "Mental Testing among Tzeltal and Tzotzil Children," XXXV Congreso Internacional de Americanistas, Actas y Memorias, III. Mexico, D. F.: Editorial Libros de Mexico, S. A. 1964. p. 65-78.

19. Modiano, Nancy. A Comparative Study of Two Approaches to the Teaching of Reading in the National Language. Unpublished report, Cooperative Research Project No. S-237, Office of Education, U. S. Department of Health, Education, and Welfare. 1966.

20. Moynihan, Patrick. The Negro Family. Office of Policy Planning and Research, U. S. Department of Labor. 1965.

21. Murray, Henry A. Thematic Apperception Test. Cambridge: Harvard University Press. 1943.

22. Olver, Rose and Hornsby, Joan R. "On Equivalence." Bruner, J. S.; Olver, Rose R.; and Greenfield, Patricia M.; editors. Studies in Cognitive Growth. New York: John Wiley and Sons. 1966. p. 68-85.

23. Piaget, Jean. The Child's Conception of the World. London, Routledge and Kegan Paul, Ltd. 1929.

24. Piaget, Jean. The Child's Conception of Physical Causality. London: Routledge and Kegan Paul, Ltd. 1930.

25. Piaget, Jean. The Moral Judgement of the Child. London: Routledge and Kegan Paul, Ltd. 1932.

26. Raven, J. C. Guide to Using the Coloured Progressive Matrices, Sets A, Ab, B. London: H. K. Lewis and Co., Ltd., and George G. Harrap and Co., Ltd. 1958.

27. Schafer, Roy. Psychoanalytic Interpretation of Rorschach Testing. New York: Grune and Stratton. 1954.

28. Schwartz, Lola R. M. Morality, Conflict and Violence in a Mexican Mestizo Village. Ph.D. Dissertation, Indiana University. 1963.

29. Terman, L. M. and Merril, M. M. Medida de la Inteligencia. Madrid: Espasa-Calpe, S. A. 1953.

30. Wolf, Eric. Sons of the Shaking Earth. Chicago: Phoenix Books. 1959.

APPENDIX

Table 1

DISTRIBUTION OF SCORES ON THE DRAW-A-MAN TEST
(In Percentages)

Approximate Age	Upper Quartile	Middle Quartiles	Lower Quartile	Total N
7	13.5	64.9	21.6	(37)
9	5.7	68.6	25.7	(35)
12	8.6	42.9	48.5	(35)
Total N	(10)	(63)	(34)	(107)

Table 2

DISTRIBUTION OF SCORES ON RAVEN'S MATRICES

(In Percentages)

Approximate Age	Upper Quartile	Middle Quartiles	Lower Quartile	Total N
7	18.8	56.2	25.0	(32)
9	15.0	70.0	15.0	(20)
11	6.2	62.5	31.3	(16)
Total N	(10)	(42)	(16)	(68)

Table 3

DISTRIBUTION OF SCORES ON THE STANFORD-BINET AND CATTEL TESTS

Median Age	I. Q.			
	111 and above	90-110	89 and below	Total
1	5	7	0	12
3	1	6	8	15
5	0	1	15	16
7	0	3	13	16
10	0	1	11	12
Total	6	18	47	71

Table 4

STANFORD-BINET: INTERMEDIATE SUB-TESTS FOR YOUNG CHILDREN

Cattell Infant Intelligence Scale

Test	Type	Task	Number Tested	Number Passing	Percent Passing
23 mo.	Performance				
		Paper fold	5	5	
		Commands	5	2	
		Cubes	5	0	
	Totals		15	7	47
	Verbal Abstract				
		Picture vocabulary	5	0	
		Name objects	5	0	
		Watch *	5	0	
	Totals		15	0	0
	Observation				
		Identify objects	5	4	80
28 mo.	Performance				
		Block train	5	4	
		Egg-beater *	5	1	
		Pencil	5	5	
	Totals		15	10	67
	Verbal Abstract				
		Picture vocabulary	5	0	
		Name objects	5	0	
		Repeat digits	5	0	
	Totals		15	0	0
28 mo.	Performance				
		Block bridge	5	4	
		Pencil	5	1	
		Fold paper	5	1	
	Totals		15	6	40
	Verbal Abstract				
		Cube	5	2	40
	Observation				
		Identify objects	5	3	
		Identify pictures	5	2	
		Form board	5	3	
	Totals		15	8	53

* Little known or used in the village

Table 5

STANFORD-BINET: INTERMEDIATE SUB-TESTS FOR YOUNG CHILDREN

Terman-Merril

Test	Type	Task	Number Tested	Number Passing	Percent Passing
3 years	Performance				
		Beads	13	11	
		Blocks	13	9	
		Copy circle	13	11	
	Totals		39	31	79
	Verbal Abstract				
		Picture vocabulary	13	2	
		Repeat digits	13	5	
	Totals		26	7	27
	Observation				
		Picture memory	13	13	
		Form board	13	7	
	Totals		26	20	77
3-6 years	Performance				
		Commands	14	10	
		Copy cross	14	11	
	Totals		28	21	75
	Verbal Abstract				
		Picture vocabulary	14	2	14
	Observation				
		Comparisons	14	10	
		Picture responses	14	13	
		Identify objects	14	11	
	Totals		42	34	81
	Comprehension		14	11	79
4 years	Performance				
		Picture completion	12	3	25
	Verbal Abstract				
		Picture vocabulary	12	0	
		Repeat sentences	12	3	
	Totals		24	3	13
	Observation				
		Discrimination of forms	12	4	
		Naming	12	7	
	Totals		24	11	46

Table 6

STANFORD-BINET: INTERMEDIATE SUB-TESTS FOR YOUNG CHILDREN

Summary

Type of Test	Number of Attempts	Percent Passing
Performance	122	64
Verbal Abstract	99	14
Observation	112	69
Comprehension	14	79

Table 7

STANFORD-BINET: VERBAL RESPONSES ON INTERMEDIATE SUB-TESTS FOR YOUNG CHILDREN

Test Type	Number of Attempts	Percent Passing
Verbal Abstract		
Isolated vocabulary (name objects, picture vocabulary)	59	7
Repeat digits and sentences	30	27
Other		
Identify (objects, pictures, one cube)	34	65
Commands	19	63
Comprehension	14	79
Picture response	14	93

Table 8

RESPONSES TO MORAL REASONING STORIES

(In Percentages)

	Approximate Ages				
	7	9	11	15	Total N
A. Strict Realism	22.2	31.2	28.6	0	(15)
B. Realism Predominates	55.6	56.2	42.9	13.8	(32)
C. Mature or Reciprocal Responses	22.2	12.5	28.6	86.2	(37)
Totals					
Percentage	100.0	99.9	100.1	100.0	
N	(18)	(16)	(21)	(29)	(84)

Chi-square = 18.4
df = 1*
$p < .01$

* Rows A and B were combined, as were columns (ages) 7 and 9, 11 and 15.

Table 9

RESPONSES ON DIFFERENTIATION TASK BY VILLAGE CHILDREN
(Mean Number of Responses)

	Age Group				
	6 - 8	8 - 10	10 - 12	12 +	Total
Decree	2.6	1.4	.7	.8	1.4
Perceptible	1.9	4.5	4.7	4.6	3.8
Functional	.7	2.8	2.1	3.6	2.3
Formal	.9	.2	1.6	.3	.8
Successes	5.1	6.4	6.3	6.8	6.1
Number of cases	19	11	15	18	63

Table 10

RESPONSES ON EQUIVALENCE TASK BY VILLAGE CHILDREN
(Mean Number of Responses)

	Age Group				
	6 - 8	8 - 10	10 - 12	12 +	Total
Decree	1.2	.4	.3	.2	.6
Perceptible	1.1	1.4	2.0	1.6	1.5
Functional	.9	.8	1.0	2.3	1.3
Formal	.5	.4	.3	.6	.5
Successes	2.9	2.5	3.1	3.9	3.2
Number of cases	19	11	15	18	63

Table 11

RESPONSES ON EQUIVALENCE TASK BY VARIOUS GROUPS
(Percentages using attribute)

	Mexico		U.S.A.	
	Village	Urban	White Middle-Class	Negro Slum
Nine year olds				
Number	(33)	(53)	(10)	
Attribute				
Perceptible	52	96	50	
Functional				
Concrete	28	66	80	
Abstract	4	9	40	
Formal	12	36	90	
Success (in 6 or 7 attempts)	16	44	60	
Twelve year olds				
Number	(18)	(49)	(10)	(30)
Attribute				
Perceptible	63	59	40	80
Functional				
Concrete	63	79	100	83
Abstract	16	76	50	53
Formal	42	67	100	73
Success (in 6 or 7 attempts)	26	82	80	43

Table 12

ATTRIBUTIONS OF LIFE
(N = 74)

Category	Number of Items	Mean*	SD	Correlations Age	 Piaget's Questions
Living	5	8.00	2.05	-.01	.25
Natural phenomena	5	5.78	3.67	.52**	.12**
Manufactured	6	6.77	4.94	.48**	.12**

* One point was scored when the child was uncertain and two when he was sure that the item had life.

** Signs reversed to show relationship between accuracy and age; higher scores on natural and manufactured items were less accurate.

Table 13

CRITERIA FOR ATTRIBUTION OF LIFE
(N = 74)

Criteria	Number of Times Used Mean	SD
1. Formal	1.0	2.0
2. Life cycle	.8	1.0
3. Destructibility	.4	1.0
4. Manufactured	.7	1.6
5. Functional	1.9	2.0
6. Antropomorphic	6.9	3.7
7. Perceptual	1.9	2.5
8. Moral or Aesthetic	.1	.2
9. Magical	1.3	2.6
10. Failure	1.1	2.6
Totals		
Life-Related (Numbers 2-6 above)	10.7	3.8
Formal	1.0	2.0
Other	4.4	3.6

Table 14

RESPONSES TO THE TWO MONEY QUESTIONS
(In Percentages)

Ages	Number of Correct Responses			Total N
	2	1	0	
6 - 8	19	71	10	(21)
8 - 10	56	38	6	(16)
10 - 12	50	44	6	(18)
12 +	67	33	0	(18)
Total	47	48	5	(73)

Table 15

CRITERIA FOR ATTRIBUTIONS OF GOODNESS
(N = 74)

	Number of Times Used		Correlation with Age	
	Mean	SD	r	p
1. Aesthetic	.11	.35	.14	NS
2. Formal	.08	.27	.19	NS
3. Functional	6.01	3.64	.54	<.01
4. Threat	3.32	2.32	-.24	<.05
5. Life processes	4.11	2.88	-.26	<.05
6. Perceptual	.50	1.00	-.26	<.05
7. Decree	.54	1.82	-.21	NS
8. Failure	.32	.88	-.15	NS
Totals				
Life ethic (numbers 1 & 5 above)	4.22	2.90	-.06	NS
Functional	6.01	3.64	.54	<.01
Threat	3.32	2.32	-.24	<.05
Other	1.44	2.44	-.11	NS

Table 16

SIGNIFICANT CORRELATIONS BETWEEN AGE AND COGNITIVE VARIABLES

	r	N
Moral judgements	.46	(84)
Monetary worth	.33	(73)
Difference judgements		
Successes	.28	(63)
Maturity of criteria	.29	(63)
Successful attributions of life		
Piaget scale	.48	(74)
Our scale	.53	(74)
Maturity of criteria for attributing goodness	.43	(74)

Table 17

SIGNIFICANT CORRELATIONS BETWEEN THE DRAW-A-MAN AND OTHER COGNITIVE VARIABLES

	r	N
Raven's Matrices	.38	(47)
Maturity of criteria in		
Equivalencies	.38	(39)
Differentiation	.32	(39)

Table 18

SIGNIFICANT CORRELATIONS BETWEEN SUCCESS AT FORMULATING EQUIVALENCIES AND OTHER COGNITIVE VARIABLES

	r	N
Total attribution of goodness	.27	(52)
Maturity of criteria for		
Equivalency judgements	.40	(63)
Differentiation	.34	(63)
Attribution of life	.28	(52)

Table 19

COMPOSITION OF THE PERSONALITY SAMPLE

Ages	Boys	Girls	Total
6 - 8	6	10	16
8 - 10	6	8	14
10 - 12	12	16	28
12 - 14	13	15	28
14 - 18	9	15	24
Total	46	64	110

Table 20

CHARACTER TRAITS IN RELATION TO AGE AND SEX

	Boys		Girls		Total	
	Percent Showing Trait	r (age)	Percent Showing Trait	r (age)	Percent Showing Trait	r (age)
1. Mode of Assimilation						
receptive	59	.09	69	.31**	65	.18*
exploitative	54	.14	67	.23	62	.18*
hoarding	54	-.15	72	-.15	60	-.15
marketing	15	.25	16	.29*	15	.27**
2. Productivity		.24		.17		.20*
creative, original	20		5		11	
interests	11		16		14	
conflicted	35		53		45	
passive, receptive	24		23		24	
no interests	11		3		6	
3. Social-Political Relations						
irrational authority	15	-.11	19	-.18	17	-.15
traditional authority	30	-.03	20	.23	25	.12
democratic	17	-.20	23	-.14	21	-.16
rebellious	50	.00	48	-.02	49	-.01
submissive	80	.29*	81	.18	81	.23*
4. Mother Fixation		.18		.09		.12
intense	72		69		70	
moderate	24		25		25	
none	4		6		5	
Father Fixation		-.03		-.05		-.03
intense	11		9		10	
moderate	48		30		37	
none	41		61		53	
Rebellion against						
father	52	.21	58	.29*	55	.25**
mother	41	.14	64	.27*	55	.20*

Table 20 (Continued)

	Boys		Girls		Total	
	Percent Showing Trait	r (age)	Percent Showing Trait	r (age)	Percent Showing Trait	r (age)
5. Aggressions						
auto-affirmative	35	-.22	28	-.25*	31	-.23*
archaic	80	-.04	80	-.09	80	-.07
necrophilic	15	-.15	16	-.18	15	-.17
little	15	-.15	19	-.01	17	-.07
6. Hostilities						
mother	54	.20	78	.02	68	.10
father	65	.15	67	.19	66	.17
women	30	.38**	30	.31**	30	.34**
men	33	.26	48	.28*	42	.26**
siblings	24	.27	33	.07	29	.15
self	35	.15	47	.24*	42	.20*
everybody	54	.23	66	.55*	61	.41**
7. Fears						
physical harm	46	.18	52	.11	49	.14
hunger	63	.00	70	.18	67	.10
abandonment	76	.29	81	.41**	79	.36**
being eaten	39	-.33*	50	-.17*	45	-.30**
being ridiculed	63	.56**	67	.45**	65	.49**
loss of possessions	26	.25	27	.16	26	.19*
loss of integrity	43	.45**	41	.08	42	.24**
sex	30	.49**	44	.32**	38	.38**
father	57	.38**	56	.18	56	.15
mother	63	.39**	73	.31**	65	.25**
Intensity of Fears		.24		.17		.20*
strong	61		80		72	
moderate	33		14		22	
little	7		6		6	
8. Identifies with						
both parents	2		5		4	
mother	59		75		69	
father	20		6		12	
neither	20		14		16	

Table 20 (Continued)

	Boys		Girls		Total	
	Percent Showing Trait	r (age)	Percent Showing Trait	r (age)	Percent Showing Trait	r (age)
9. Stronger Parent						
mother	63		69		66	
father	28		20		24	
neither	9		11		10	
10. Sense of Reality		-.07		-.07		-.07
good	17		20		19	
adequate	41		55		49	
poor	41		25		32	
11. Mother seen as		.25		.30*		.28**
loving	13		3		7	
conditional	67		81		75	
rejecting	20		16		17	
12. Level of Aspirations		.53**		.62**		.58**
high	17		6		11	
moderate	30		45		39	
worker	15		5		9	
peasant	13		8		10	
none	24		36		31	
13. Wishes						
wealth	28	-.19	33	-.19	31	-.14
rebellion	37	.30*	42	.30*	40	.30**
aggression	37	.20	47	.34**	44	.28**
happiness	52	.47**	58	.26*	55	.35**
N	46		64		110	
Mean Age	12.2		12.4		12.3	

* $p < .05$
** $p < .01$

Table 21

INTERCORRELATIONS AMONG THE PERSONALITY FACTORS *

(N = 110)

	Factors							
	1	2	3	4	5	6	7	8
1. Receptive		.40	.16	.32	.36	-.03	-.01	.13
2. Authoritarian-Destructive			.36	.35	.52	-.09	-.12	.08
3. Exploitative-Rebellious				.37	.52	.31	-.17	-.09
4. Submissive-Marketing					.41	.05	-.08	-.02
5. Rejection of the Father						.07	-.04	.23
6. Infantile							.22	-.09
7. Democratic-Autoaffirmative								.26
8. Productive-Hoarding								

* $p < .05$ when $r < .18$

$p < .01$ when $r < .24$

Table 22

PERSONALITY FACTORS CORRELATED WITH SEX AND AGE

Factors	Correlations with Age Boys	 Girls	 Total
1. Receptive	.26	.27	.26
2. Authoritarian-Destructive	.34	.49	.43
3. Exploitative-Rebellious	.29	.18	.22
4. Submissive-Marketing	.57	.40	.47
5. Rejection of the Father	.53	.41	.46
6. Infantile	-.10	-.19	-.16
7. Democratic-Autoaffirmative	-.23	-.21	-.22
8. Productive-Hoarding	.14	-.10	.06
N =	(46)	(64)	(110)
$p < .05$ when $r <$	.28	.25	.18
$p < .01$ when $r <$	.37	.32	.24

Table 23

CHILD CHARACTER FACTORS CORRELATED WITH FATHER'S CHARACTER FACTORS (N = 83)*

Child Factors	Father's Character Factors** 1	2	3	4	5	6
1. Receptive	.26	-.02	.01	-.00	-.07	.07
2. Authoritarian-Destructive	.08	-.14	.05	-.04	-.11	-.03
3. Exploitative-Rebellious	-.09	-.19	.10	-.06	-.02	-.03
4. Submissive-Marketing	.08	-.11	.10	.05	.14	-.17
5. Rejection of the Father	.11	-.13	.05	.06	-.07	-.20
6. Infantile	-.09	.01	-.02	-.08	.10	-.03
7. Democratic-Autoaffirmative	-.09	.23	.13	.15	.09	.02
8. Productive-Hoarding	-.02	.12	.00	.21	.09	-.08

* $p < .05$ when $r < .21$; $p < .01$ when $r < .28$

** 1. Adjustment
2. Productivity
3. Authoritarian
4. Hoarding-Receptive
5. Social Role
6. Mother-Father Fixation

Table 24

CHILD CHARACTER FACTORS CORRELATED WITH MOTHER'S CHARACTER FACTORS (N = 105)*

Child Factors	Mother's Character Factors** 1	2	3	4	5	6
1. Receptive	-.15	.10	.03	-.01	-.03	.26
2. Authoritarian-Destructive	-.05	-.03	-.01	.07	-.05	.20
3. Exploitative-Rebellious	-.01	-.05	-.02	.04	.14	.20
4. Submissive-Marketing	.05	-.07	.06	-.10	.10	.30
5. Rejection of the Father	-.04	.06	-.04	-.07	.00	.21
6. Infantile	.01	.05	.04	-.04	.10	.21
7. Democratic-Autoaffirmative	.24	.07	-.12	-.04	-.10	.05
8. Productive-Hoarding	.11	.19	.01	.09	-.19	-.04

* $p < .05$ when $r < .19$; $p < .01$ when $r < .25$

** 1. Adjustment
2. Productivity
3. Authoritarian
4. Hoarding-Receptive
5. Social Role
6. Mother-Father Fixation

Table 25

THE PRODUCTIVE CHILD CHARACTER FACTORS CORRELATED WITH MEASURES OF INTELLECTUAL ACHIEVEMENT

Factors	School Achievement	Draw-A-Man	Raven's	Stanford-Binet
7. Democratic-Autoaffirmative	.14	-.34	-.09	-.07
8. Productive-Hoarding	.27	.22	.36	-.21
N =	48	42	44	24
$p < .05$ when $r <$	.27	.30	.29	.39
$p < .01$ when $r <$	.35	.39	.37	.40

Table 26

THE PRODUCTIVE-HOARDING CHILD CHARACTER FACTOR CORRELATED WITH THE DRAWINGS OF OBJECTS*

(N = 53)

Scoring of the Drawings	Factor 8
Creative	-.02
Rebellious	-.26
Submissive	-.15
Mercantilistic	.24

* $p < .05$ when $r < .27$

Table 27

FATHERS' CHARACTER FACTORS CORRELATED WITH MEASURES OF CHILDREN'S INTELLECTUAL ACHIEVEMENT

Character Factors	School Achievement	Draw-A-Man	Raven's	Stanford-Binet	Success at Equivalence
1. Maturity	-.02	-.23	-.26	-.06	.10
2. Productivity	-.10	-.02	-.06	-.03	.09
3. Authoritarian	-.19	-.01	.07	.35	-.33
4. Hoarding-Receptive	.30	-.02	-.00	-.25	-.02
5. Social Role	-.01	.03	-.06	-.22	-.03
6. Parental Fixation	-.22	.09	-.36	.02	.03
N =	50	40	45	22	49
$p < .05$ when $r <$	.27	.30	.29	.40	.27
$p < .01$ when $r <$	.35	.39	.37	.52	.35

Table 28

MOTHERS' CHARACTER FACTORS CORRELATED WITH MEASURES OF CHILDREN'S INTELLECTUAL ACHIEVEMENT

Character Factors	School Achievement	Draw-A-Man	Raven's	Stanford-Binet	Success at Equivalence
1. Maturity	.06	-.06	.02	-.11	.05
2. Productivity	-.15	.09	.38	.16	-.14
3. Authoritarian	-.06	.05	-.02	.50	.18
4. Hoarding-Receptive	.09	-.22	-.28	-.36	-.10
5. Social Role	-.05	.31	.02	.06	-.01
6. Parental Fixation	-.01	-.01	.07	.11	-.05
N =	57	50	51	26	59
$p < .05$ when $r <$	.25	.27	.27	.37	.25
$p < .01$ when $r <$	.33	.35	.35	.48	.33